

ANTARCTIC ICE CHARTS 1987-1988



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PREPARED BY
NAVAL POLAR OCEANOGRAPHY CENTER
SUITLAND, MD

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FOREWORD

The U.S. Navy has a long and eventful history of polar exploration from Robert E. Peary in the Arctic to Richard E. Byrd in the Antarctic. In recent years the strategic importance and expanded research pursuits in these areas have resulted in greater national and international requirements for environmental information. Since 1976, the National Oceanic and Atmospheric Administration (NOAA) and the Navy have worked together at the Joint Ice Center (JIC) in Suitland, Maryland. By combining the Navy's experience in observing and recording sea ice data, and NOAA's expertise in satellite data collection and interpretation, the JIC has been able to keep pace with that demand in both polar regions.

This publication is the 8th edition in a continuing bi-yearly series of Antarctic sea ice atlases prepared by the JIC. The atlas contains weekly charts depicting Southern Hemisphere ice conditions and extent. The significant use of high resolution satellite imagery has greatly improved the accuracy of these analyses.

The purpose of this atlas is to provide the user with reliable weekly hemispheric ice analyses. Both Navy and NOAA personnel with considerable experience in sea ice analysis prepare the analyses. The following procedures have been developed to ensure the quality of the final products:

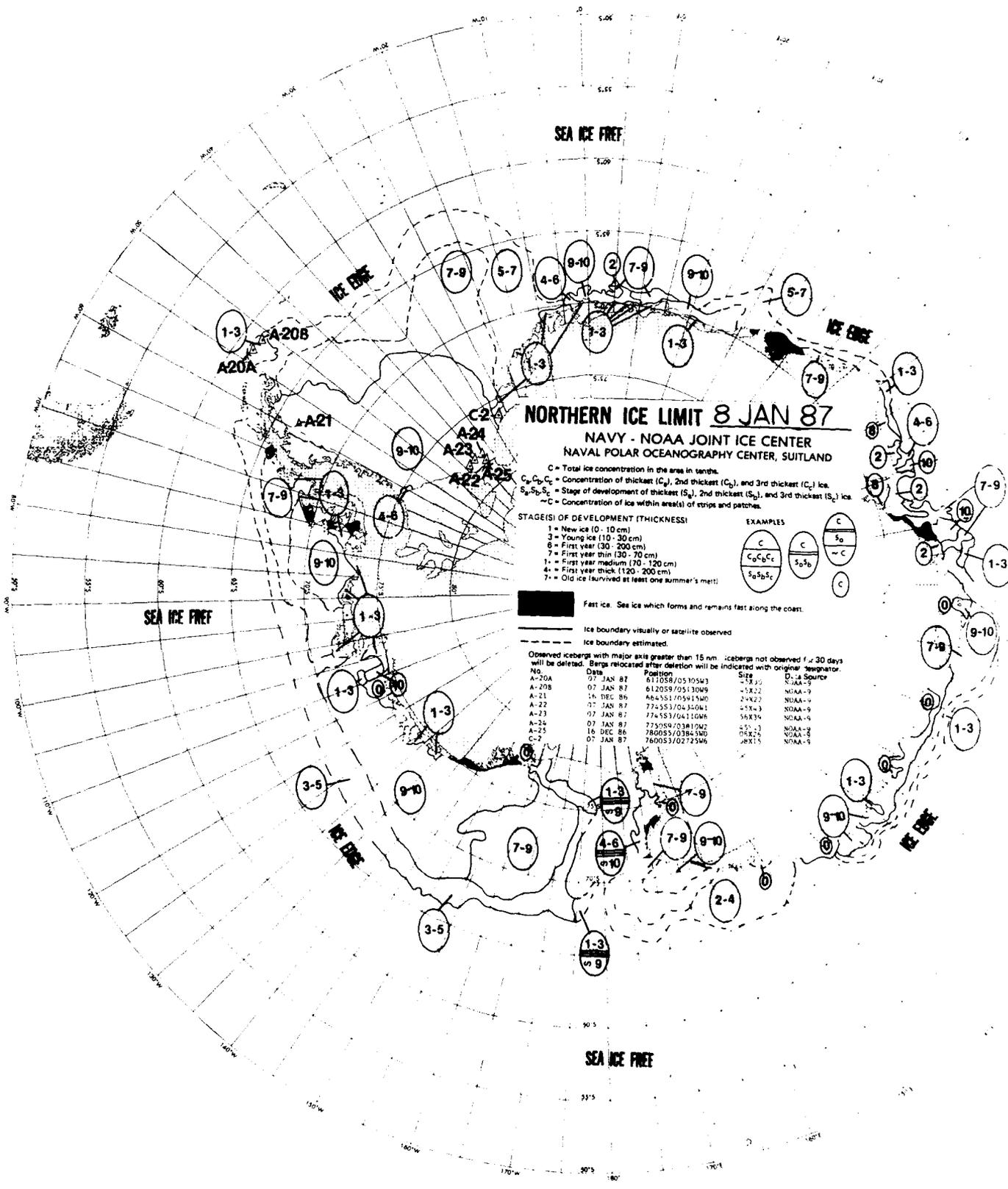
a. Satellite data from different sensors is compared and analyzed for ice information content. Table I, located on the inside back cover, summarizes satellite data available during 1987 and 1988.

b. Where insufficient data is available, an estimated boundary will be depicted. Meteorological data and theoretical ice drift data are utilized to determine the estimated ice edge position.

Navy/NOAA Joint Ice Center
Naval Polar Oceanography Center
4301 Suitland Road
Washington, DC 20395-5180

REPORT DOCUMENTATION PAGE

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FIELD	GROUP	SUB-GROUP	Sea ice, polar ice fields, satellite imagery, concentration stage of development, fast ice, concentration of thickness, theoretical thickness, Arctic
19 ABSTRACT (Continue on reverse if necessary and identify by block number) These are approximately 7-day analyses of sea ice prepared by the Naval Polar Oceanography Center, Suitland, MD. Included are ice concentrations and ice thickness (age). 			
20 DISTRIBUTION/AVAILABILITY OF ABSTRACT <input type="checkbox"/> UNCLASSIFIED/UNLIMITED <input checked="" type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS		21 ABSTRACT SECURITY CLASSIFICATION Unclassified	
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NORTHERN ICE LIMIT 8 JAN 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS):
 1 = New ice (10 - 10 cm)
 3 = Young ice (10 - 30 cm)
 6 = First year thin (30 - 200 cm)
 7 = First year thin (20 - 70 cm)
 4 = First year medium (70 - 120 cm)
 8 = First year thick (120 - 200 cm)
 7 = Old ice (survived at least one summer's melt)

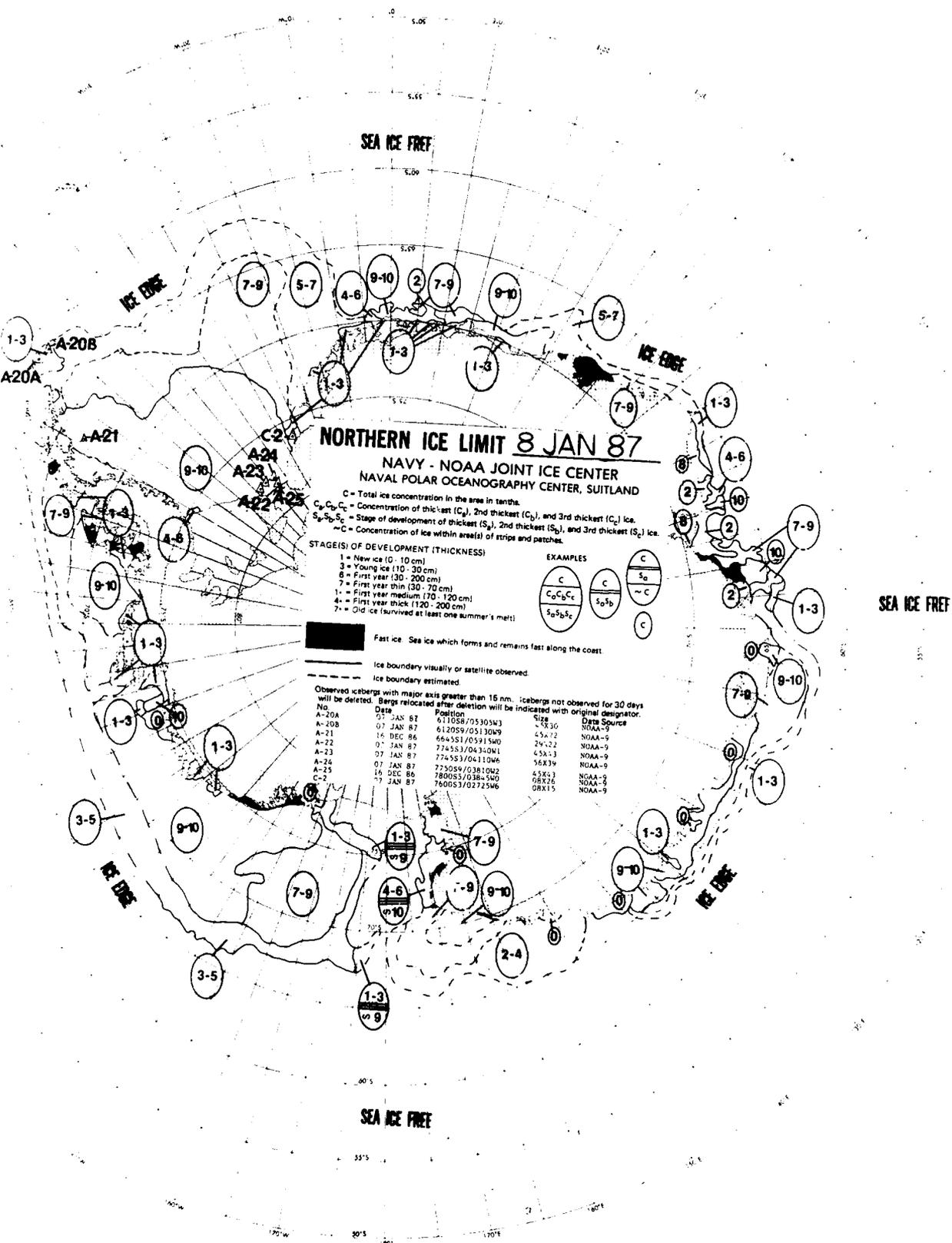
EXAMPLES

$\frac{C}{C_1 C_2 C_3}$	$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{-C}$
$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{-C}$	$\frac{C}{-C}$

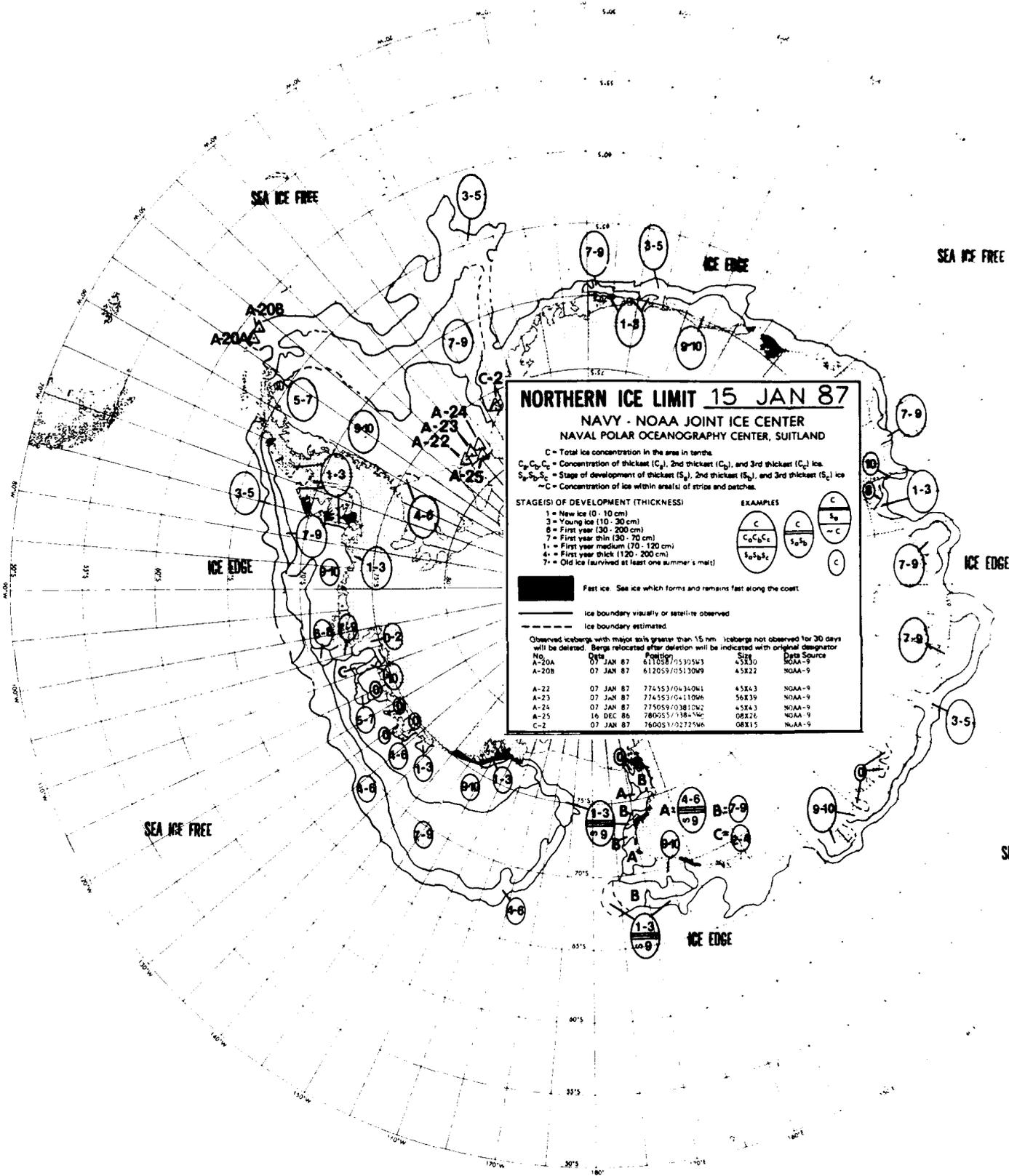
Fast ice: See ice which forms and remains fast along the coast.
 --- Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original signator.

No.	Date	Position	Size	D.L. Source
A-20A	07 JAN 87	611059/0510543	45x15	NOAA-9
A-20B	07 JAN 87	612059/0510549	45x15	NOAA-9
A-21	16 DEC 86	664551/0591540	24x27	NOAA-9
A-22	07 JAN 87	774553/0435041	45x43	NOAA-9
A-23	07 JAN 87	774553/0411046	56x39	NOAA-9
A-24	07 JAN 87	775059/0381042	55x31	NOAA-9
A-25	16 DEC 86	780653/0384540	05x25	NOAA-9
C-2	07 JAN 87	780653/0272546	48x15	NOAA-9



A-1



NORTHERN ICE LIMIT 15 JAN 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice
 -C = Concentration of ice within areas of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (10 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

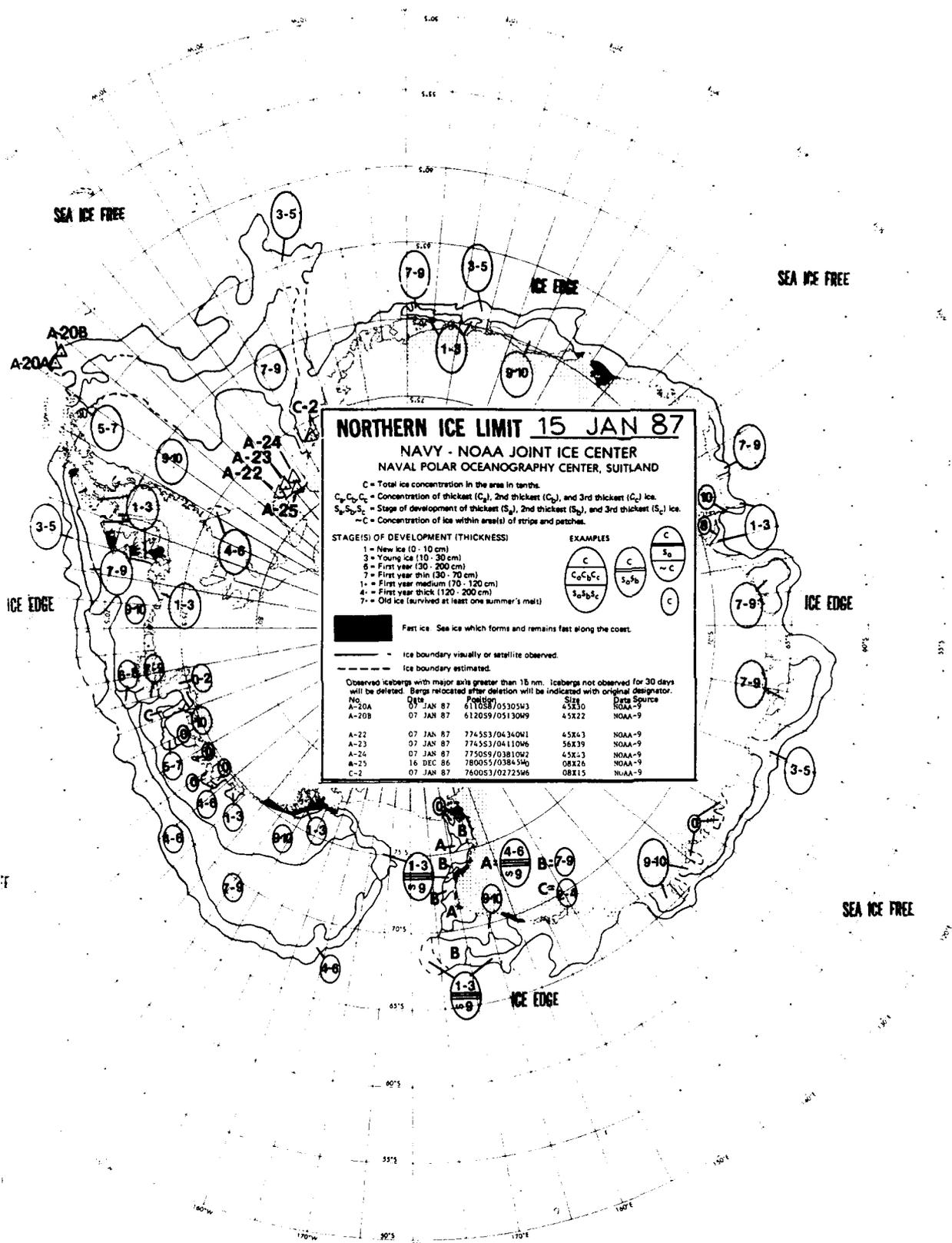
$\frac{C}{C_1 C_2 C_3}$	$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{-C}$
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Fast ice. See ice which forms and remains fast along the coast.

— Ice boundary visually or satellite observed
 - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	07 JAN 87	611059/0530543	45X20	NOAA-9
A-20B	07 JAN 87	612059/0513049	45X22	NOAA-9
A-22	07 JAN 87	774553/0434041	45X43	NOAA-9
A-23	07 JAN 87	774553/0411046	56X39	NOAA-9
A-24	07 JAN 87	775059/0410242	45X43	NOAA-9
A-25	16 DEC 86	780055/1384540	08X26	NOAA-9
C-2	07 JAN 87	760053/0272546	08X15	NOAA-9



NORTHERN ICE LIMIT 15 JAN 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areals of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

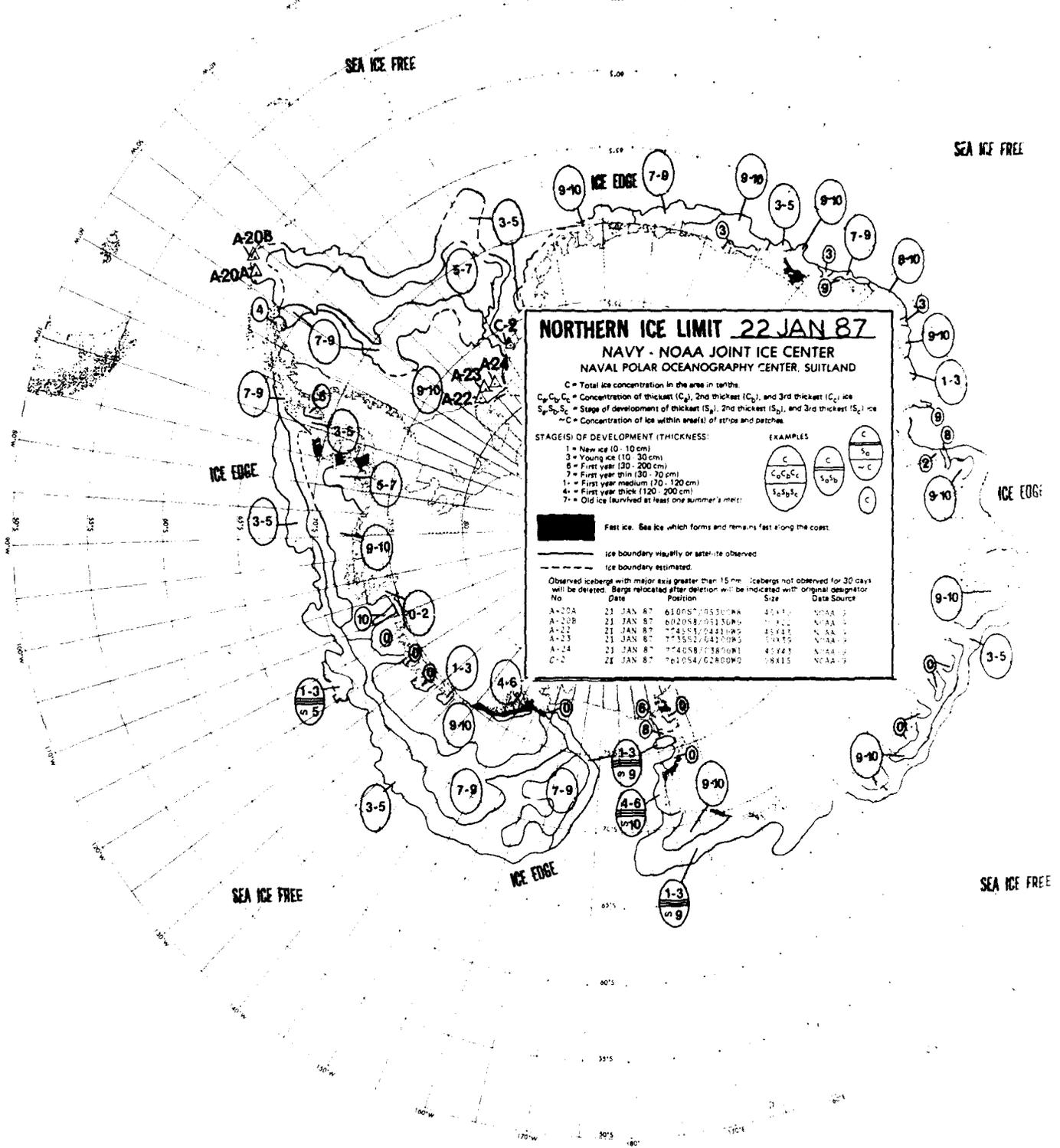
$\frac{C}{S_1}$	$\frac{C}{S_2}$	$\frac{C}{S_3}$
$\frac{C_1 C_2 C_3}{S_1 S_2 S_3}$	$\frac{C}{S_1 S_2}$	$\frac{C}{S_2 S_3}$
$\frac{C}{S_1}$	$\frac{C}{S_2}$	$\frac{C}{S_3}$

Legend:

- Fast ice - Sea ice which forms and remains fast along the coast.
- - - Ice boundary visually or satellite observed.
- Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	07 JAN 87	611058/05305W3	45X30	NOAA-9
A-20B	07 JAN 87	612059/05130W9	45X22	NOAA-9
A-22	07 JAN 87	774553/04340N1	45X43	NOAA-9
A-23	07 JAN 87	774553/04110W6	56X39	NOAA-9
A-24	07 JAN 87	775059/03810W2	45X13	NOAA-9
A-25	16 DEC 86	780055/03845W0	08X26	NOAA-9
C-2	07 JAN 87	760053/02725W6	08X15	NOAA-9



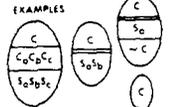
NORTHERN ICE LIMIT 22 JAN 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice
 -C = Concentration of ice within areas of strips and patches

STAGE(S) OF DEVELOPMENT (THICKNESS):

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 4 = First year medium (70 - 120 cm)
- 8 = First year thick (120 - 200 cm)
- 7+ = Old ice (survived at least one summer's melt)



Fast ice: Sea ice which forms and remains fast along the coast.

— Ice boundary visually or satellite observed
 - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	21 JAN 87	61.05°N / 05.51°W	43 x 11	N/NAO-2
A-20B	21 JAN 87	60.20°N / 03.30°W	11 x 11	N/NAO-2
A-22	21 JAN 87	77.45°N / 04.43°W	45 x 15	N/NAO-2
A-23	21 JAN 87	77.35°N / 04.10°W	13 x 15	N/NAO-2
A-24	21 JAN 87	77.40°N / 03.87°W	47 x 27	N/NAO-2
C-2	22 JAN 87	76.10°N / 02.00°W	18 x 15	N/NAO-2

SEA ICE FREE

SEA ICE FREE

A-20B
A-20A

NORTHERN ICE LIMIT 22 JAN 87
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of stripe and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS):

- 1 = New ice (10 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

Fast ice. See ice which forms and remains fast along the coast.

— Ice boundary visually or satellite observed
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Observed icebergs with major axis greater than 15 nm; icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

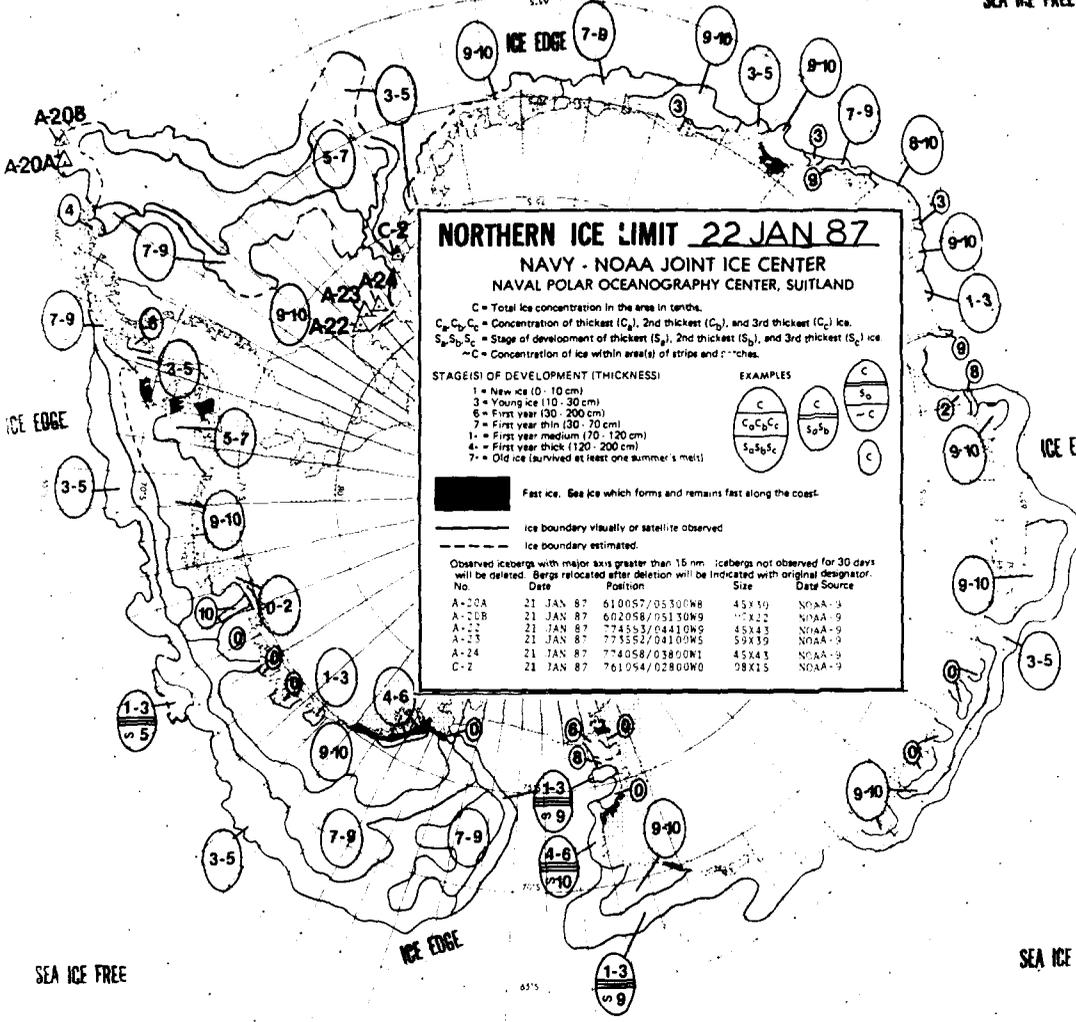
No.	Date	Position	Size	Data Source
A-20A	21 JAN 87	610057/0530088	45X90	NOAA-9
A-20B	21 JAN 87	602058/0511089	11X22	NOAA-9
A-22	21 JAN 87	774553/0441089	45X43	NOAA-9
A-23	21 JAN 87	775352/0410085	59X39	NOAA-9
A-24	21 JAN 87	774058/0380081	45X43	NOAA-9
C-2	21 JAN 87	761054/0280080	98X15	NOAA-9

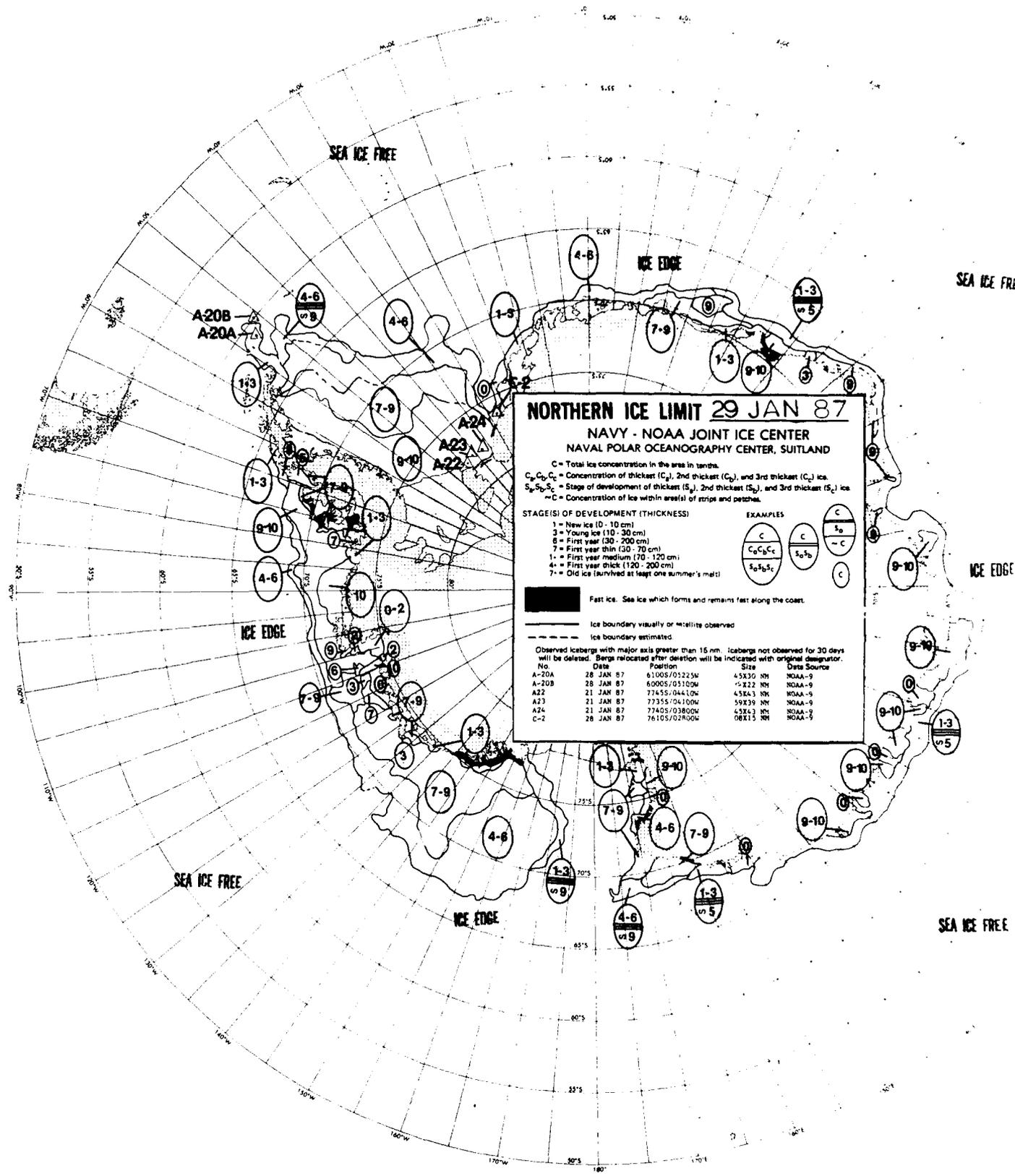
ICE EDGE

ICE EDGE

SEA ICE FREE

SEA ICE FREE





NORTHERN ICE LIMIT 29 JAN 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in parts.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 $\sim C$ = Concentration of ice within areas of ridges and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

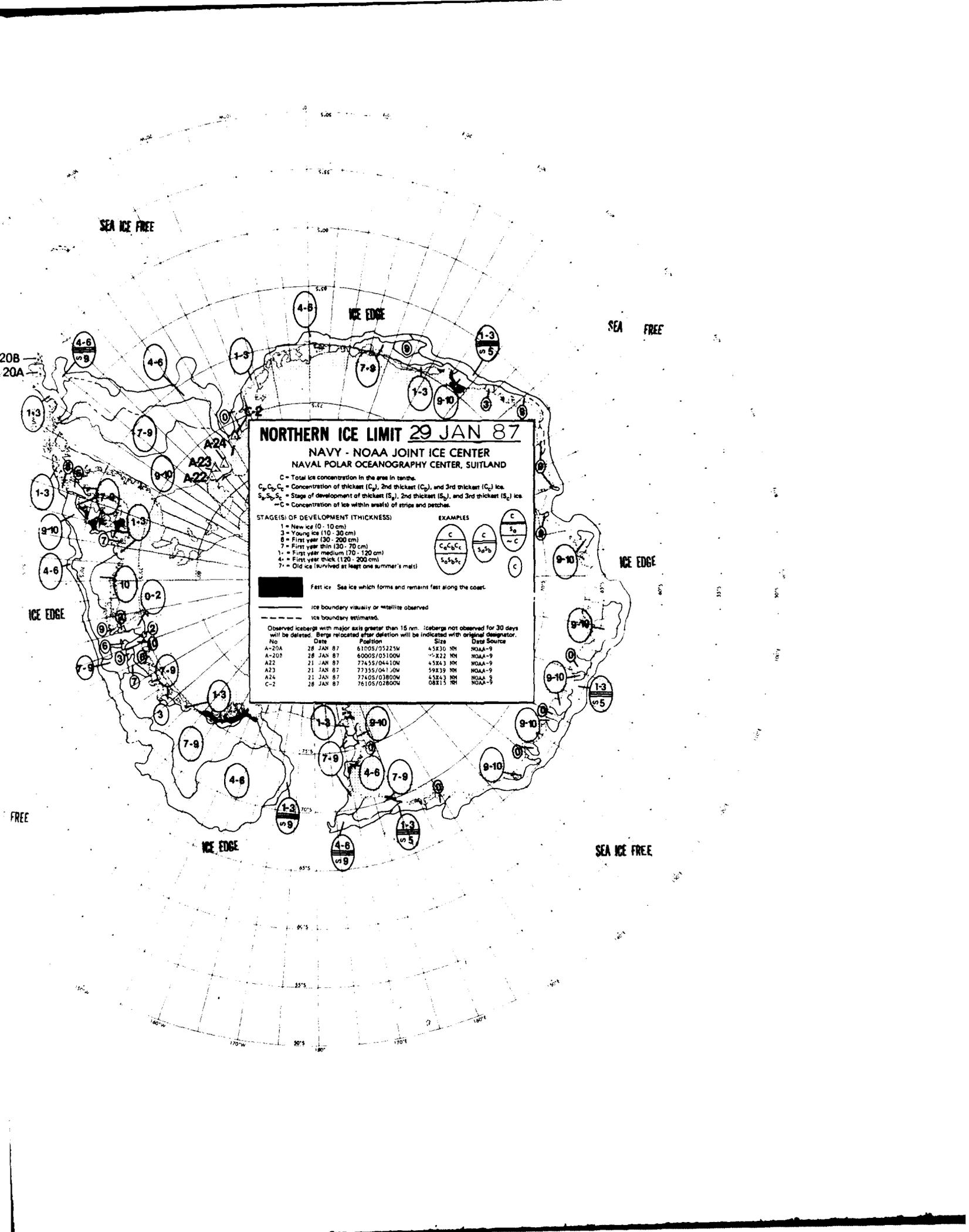
$\frac{C}{C_1 C_2 C_3}$	$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{S_1}$
$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{S_1}$	$\frac{C}{S_1}$

Fast ice. Sea ice which forms and remains fast along the coast.

— Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	28 JAN 87	6100S/02225W	45X30 NM	NOAA-9
A-20B	28 JAN 87	6000S/02110W	45X22 NM	NOAA-9
A22	21 JAN 87	7745S/04410W	45X43 NM	NOAA-9
A23	21 JAN 87	7735S/04100W	59X39 NM	NOAA-9
A24	21 JAN 87	7740S/03800W	43X43 NM	NOAA-9
C-2	28 JAN 87	7610S/02800W	08X15 NM	NOAA-9

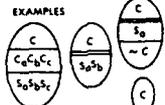


NORTHERN ICE LIMIT 29 JAN 87

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C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

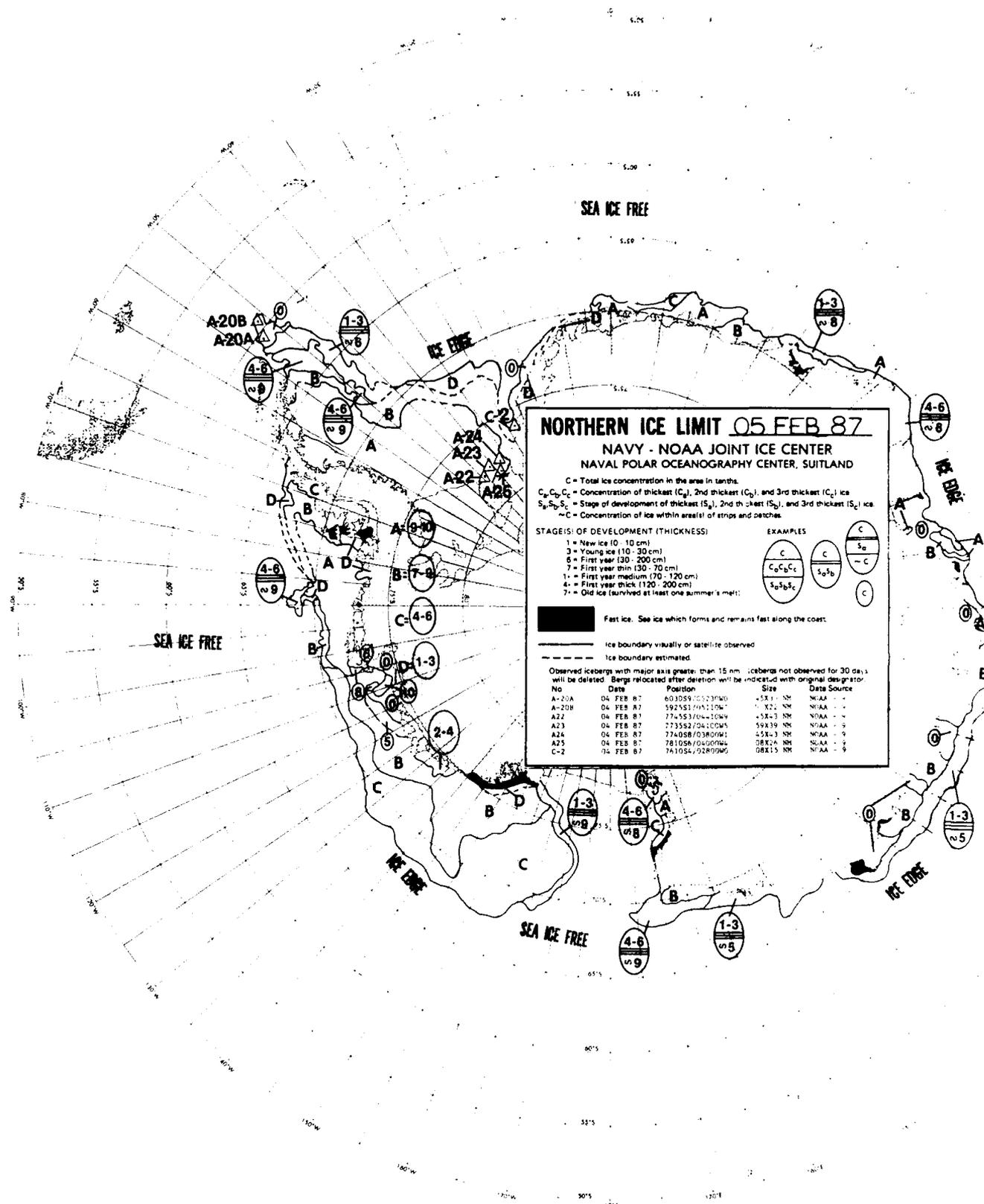
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 - 7 = First year thin (30 - 70 cm)
 - 1 = First year medium (70 - 120 cm)
 - 4 = First year thick (120 - 200 cm)
 - 7 = Old ice (survived at least one summer's melt)



Fast ice - Sea ice which forms and remains fast along the coast.
 - - - - - Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	28 JAN 87	6100S/05225W	45X30 NM	NOAA-9
A-20B	28 JAN 87	6000S/05100W	75X22 NM	NOAA-9
A-22	21 JAN 87	7745S/04410W	45X13 NM	NOAA-9
A-23	21 JAN 87	7735S/04110W	59X39 NM	NOAA-9
A-24	21 JAN 87	7740S/03800W	45X43 NM	NOAA-9
C-2	28 JAN 87	7610S/02800W	08X15 NM	NOAA-9



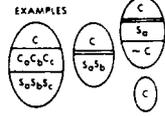
NORTHERN ICE LIMIT 05 FEB 87

NAVY - NOAA JOINT ICE CENTER
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C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 - C = Concentration of ice within areas of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

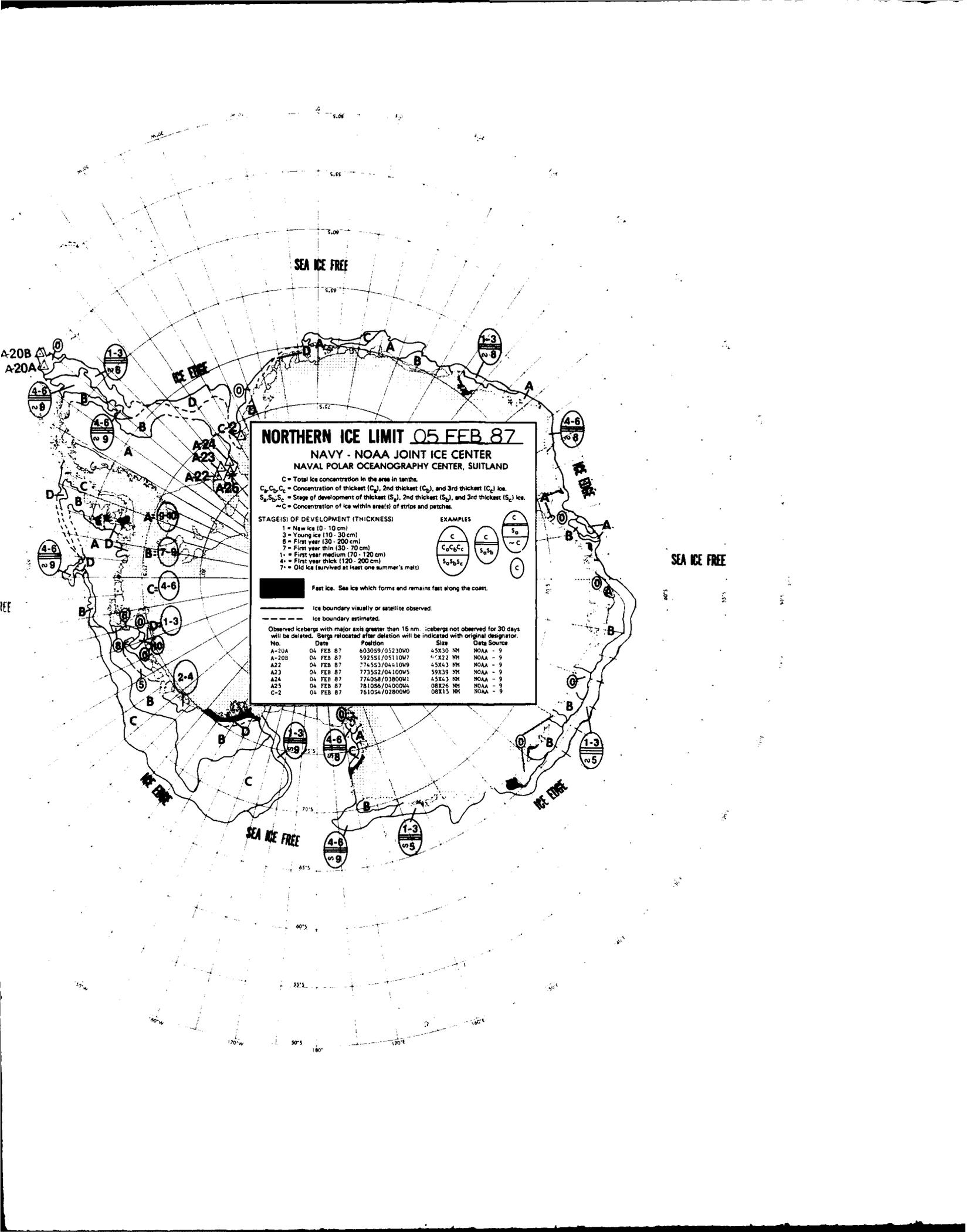
- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
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- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)



Fast ice. See ice which forms and remains fast along the coast.
 - - - - - Ice boundary visually or satellite observed
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Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	04 FEB 87	603059/0223760	45X1 NM	NCAA
A-20B	04 FEB 87	592551/0411047	1 X2 NM	NCAA
A22	04 FEB 87	774553/0411049	43X3 NM	NCAA
A23	04 FEB 87	773552/0410045	59X9 NM	NCAA
A24	04 FEB 87	774058/0380041	45X3 NM	NCAA
A25	04 FEB 87	781058/0430044	38X24 NM	NCAA
C-2	04 FEB 87	741054/0280040	08X15 NM	NCAA



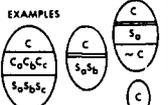
NORTHERN ICE LIMIT 05 FEB 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 $\sim C$ = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

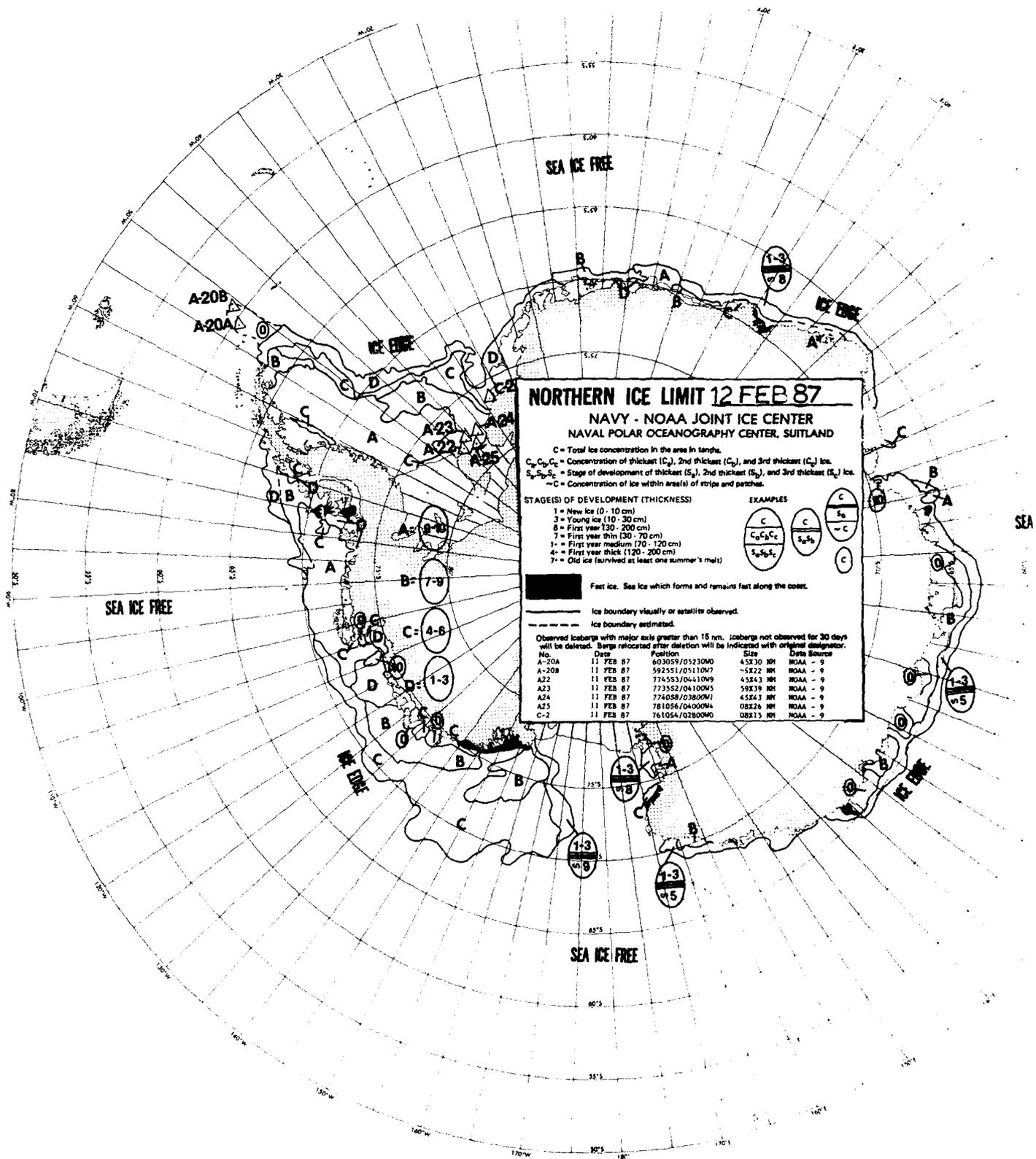
- 1 = New ice (0 - 10 cm)
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- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (arrived at least one summer's melt)



Fast ice. Sea ice which forms and remains fast along the coast.
 --- Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	04 FEB 87	603059/052300	45X30 NM	NOAA - 9
A-20B	04 FEB 87	592551/051100	45X22 NM	NOAA - 9
A22	04 FEB 87	774553/044100	45X43 NM	NOAA - 9
A23	04 FEB 87	773552/041000	39X25 NM	NOAA - 9
A24	04 FEB 87	774058/038000	45X43 NM	NOAA - 9
A25	04 FEB 87	781056/040000	08X26 NM	NOAA - 9
C-2	04 FEB 87	761054/028000	08X13 NM	NOAA - 9



NORTHERN ICE LIMIT 12 FEB 87

NAVY - NOAA JOINT ICE CENTER
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C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of stripe and patch.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
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- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

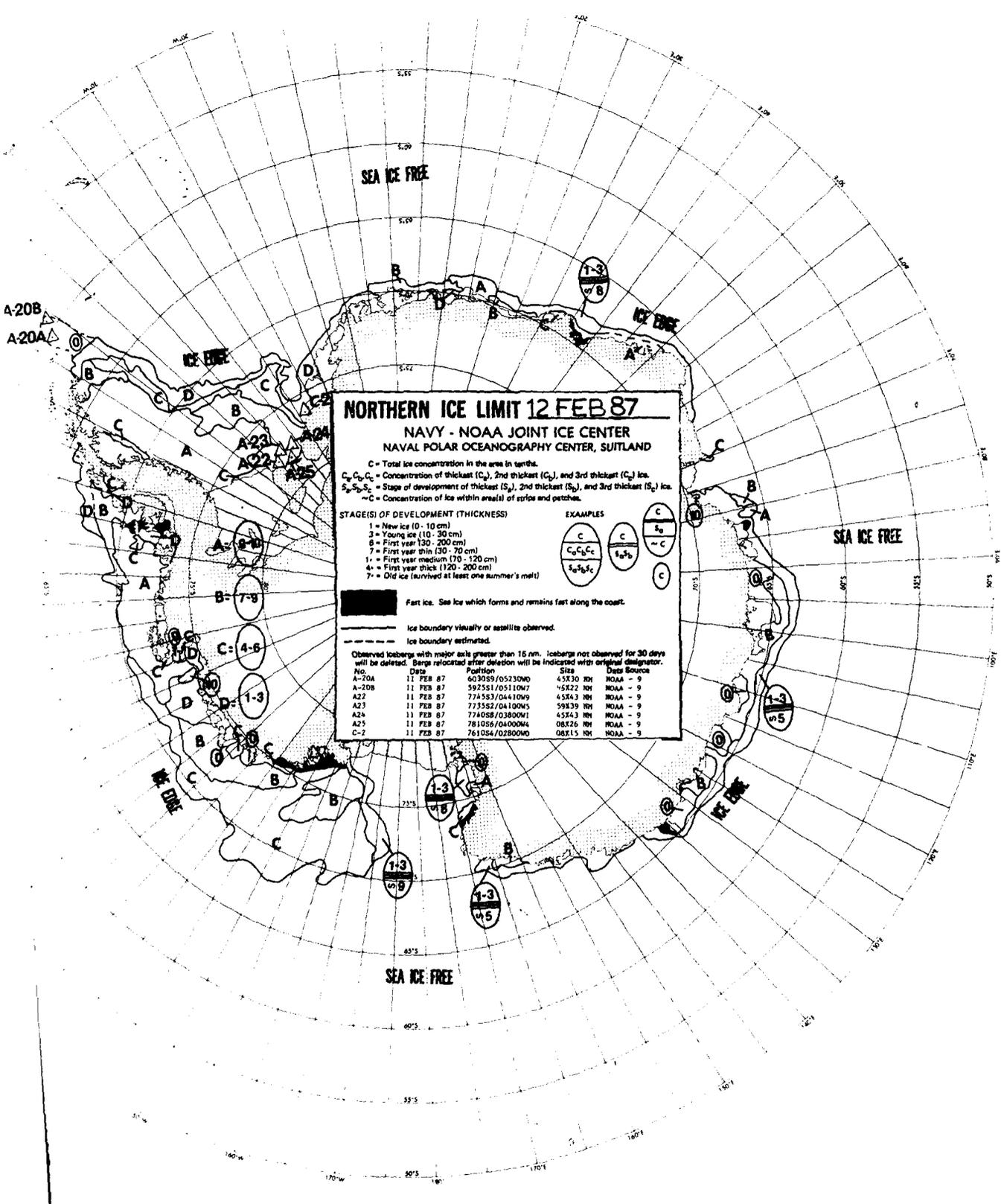
EXAMPLES



- Fast ice. Sea ice which forms and remains fast along the coast.
- Ice boundary visually or satellite observed.
- Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	11 FEB 87	603059/0523040	45830 MH	NOAA - 9
A-20B	11 FEB 87	592351/0511067	5822 MH	NOAA - 9
A22	11 FEB 87	774553/0441049	45843 MH	NOAA - 9
A23	11 FEB 87	773552/0410045	59839 MH	NOAA - 9
A24	11 FEB 87	774058/0280041	45843 MH	NOAA - 9
A25	11 FEB 87	781056/0400044	08826 MH	NOAA - 9
C-2	11 FEB 87	761054/0280040	08813 MH	NOAA - 9



NORTHERN ICE LIMIT 12 FEB 87

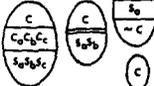
NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of stripes and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

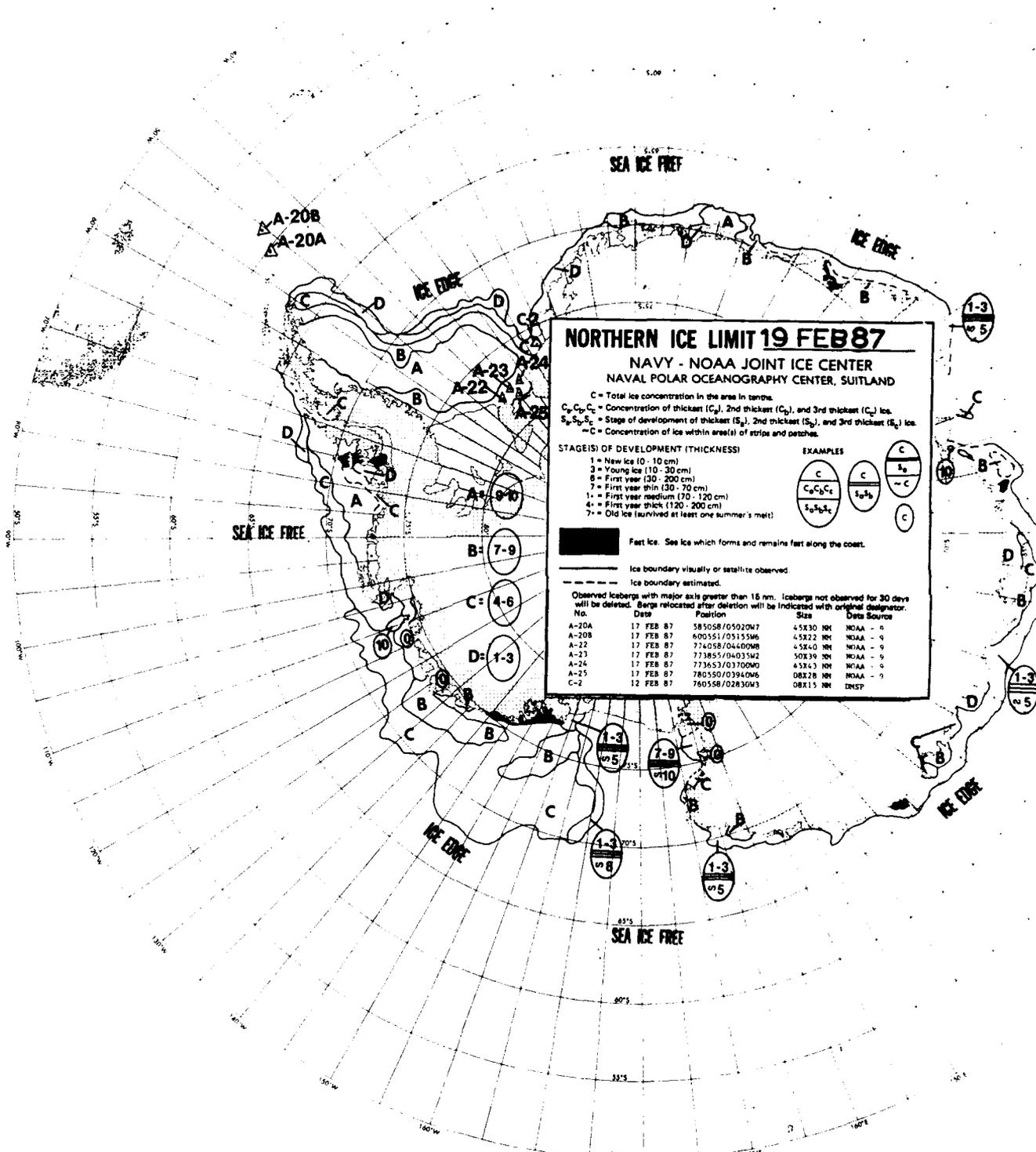
- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year thin (30 - 70 cm)
- 4 = First year medium (70 - 120 cm)
- 5 = First year thick (120 - 200 cm)
- 6 = Old ice (survived at least one summer's melt)

EXAMPLES



■ Fast ice. See ice which forms and remains fast along the coast.
 --- Ice boundary visually or satellite observed.
 - - - Ice boundary estimated.
 Observed icebergs with major axis greater than 15 cm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	11 FEB 87	603029/05230N0	45X30 NM	NOAA - 9
A-20B	11 FEB 87	592551/05110N7	45X22 NM	NOAA - 9
A22	11 FEB 87	774553/04410N9	45X43 NM	NOAA - 9
A23	11 FEB 87	773552/04100N5	59X39 NM	NOAA - 9
A24	11 FEB 87	774058/03800N1	43X43 NM	NOAA - 9
A25	11 FEB 87	781056/04000N4	08X26 NM	NOAA - 9
C-2	11 FEB 87	761054/02800N0	08X15 NM	NOAA - 9



NORTHERN ICE LIMIT 19 FEB 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 9 = First year (30 - 200 cm)
- 7 = First year thin (50 - 70 cm)
- 4 = First year medium (70 - 120 cm)
- 5 = First year thick (120 - 200 cm)
- 7+ = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$
 $\frac{S_1 S_2 S_3}{-C}$

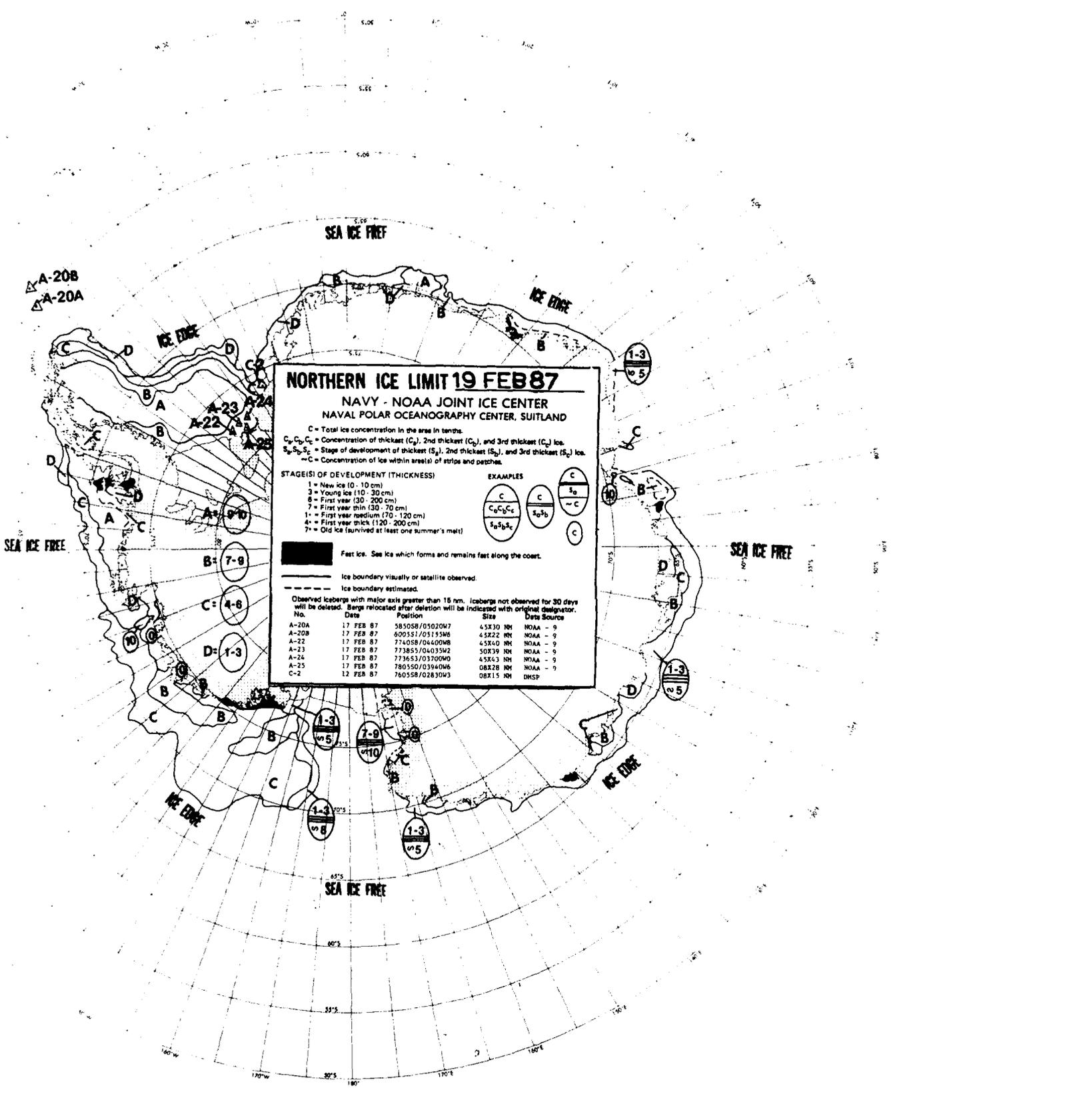
$\frac{C}{S_1 S_2 S_3}$
 $\frac{C}{-C}$

$\frac{C}{S_1 S_2 S_3}$
 $\frac{C}{-C}$

■ Fast ice. See ice which forms and remains fast along the coast.
 --- Ice boundary visually or satellite observed.
 - - - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	17 FEB 87	585058/050207	45X30 NM	NOAA - 9
A-20B	17 FEB 87	400551/051554	45X22 NM	NOAA - 9
A-22	17 FEB 87	774058/044008	45X40 NM	NOAA - 9
A-23	17 FEB 87	773855/040352	50X39 NM	NOAA - 9
A-24	17 FEB 87	773653/037000	45X40 NM	NOAA - 9
A-25	17 FEB 87	780550/039406	08X28 NM	NOAA - 9
C-2	12 FEB 87	760558/028303	08X15 NM	INSP



NORTHERN ICE LIMIT 19 FEB 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 8 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7+ = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$
 $\frac{S_1 S_2 S_3}{-C}$

$\frac{C}{S_1 S_2}$
 $\frac{S_1 S_2}{-C}$

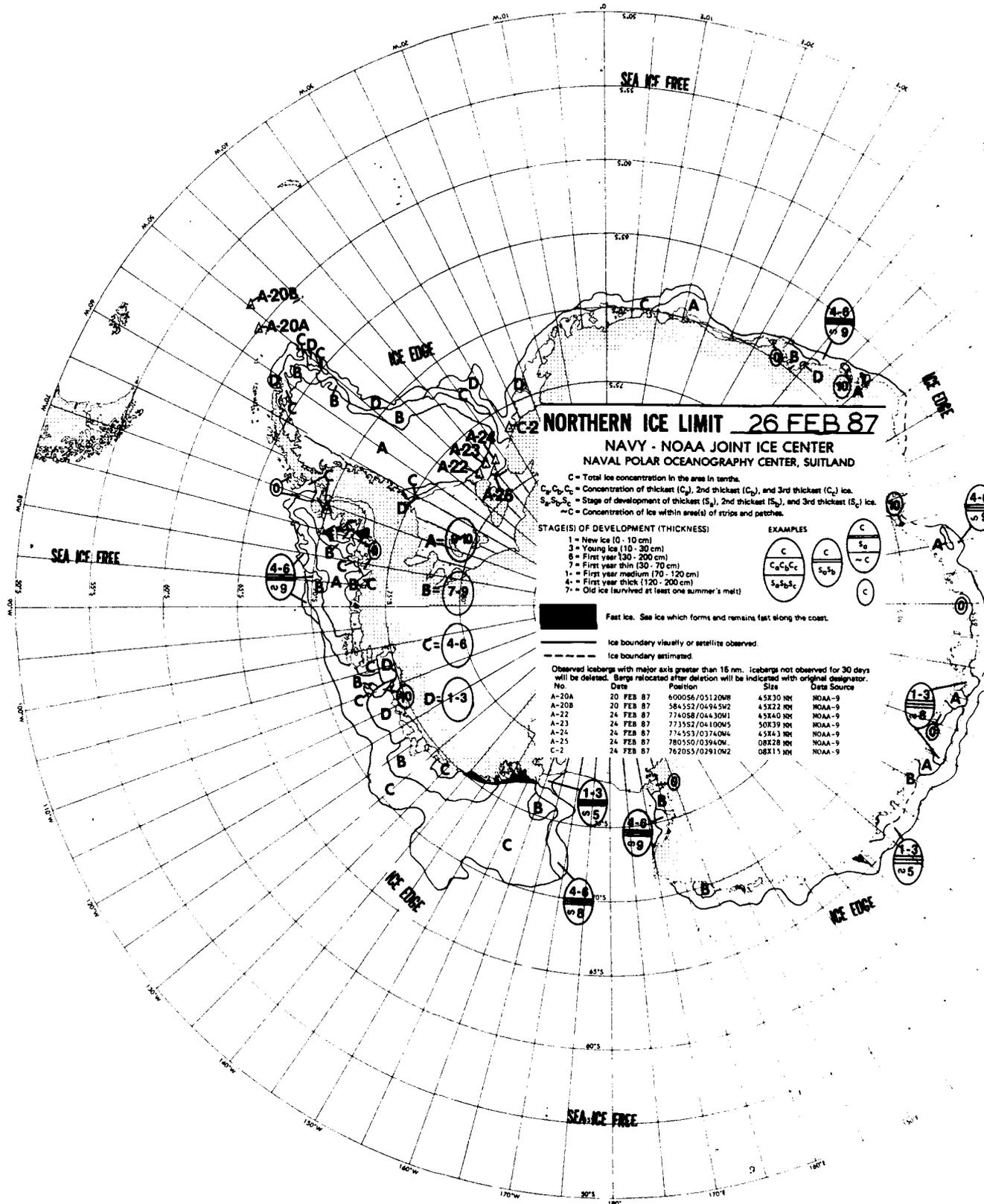
$\frac{C}{S_1}$
 $\frac{S_1}{-C}$

■ Fast ice. See ice which forms and remains fast along the coast.

— Ice boundary visually or satellite observed.
 - - - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	17 FEB 87	585058/05020W7	45X30 NM	NOAA - 9
A-20B	17 FEB 87	600551/05153W6	45X22 NM	NOAA - 9
A-22	17 FEB 87	774058/04400W8	45X40 NM	NOAA - 9
A-23	17 FEB 87	773855/04035W2	50X39 NM	NOAA - 9
A-24	17 FEB 87	773653/03700W0	45X43 NM	NOAA - 9
A-25	17 FEB 87	780550/03940W6	08X28 NM	NOAA - 9
C-2	12 FEB 87	760558/02830W3	08X15 NM	DMSP



NORTHERN ICE LIMIT 26 FEB 87

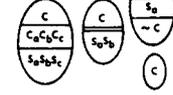
NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



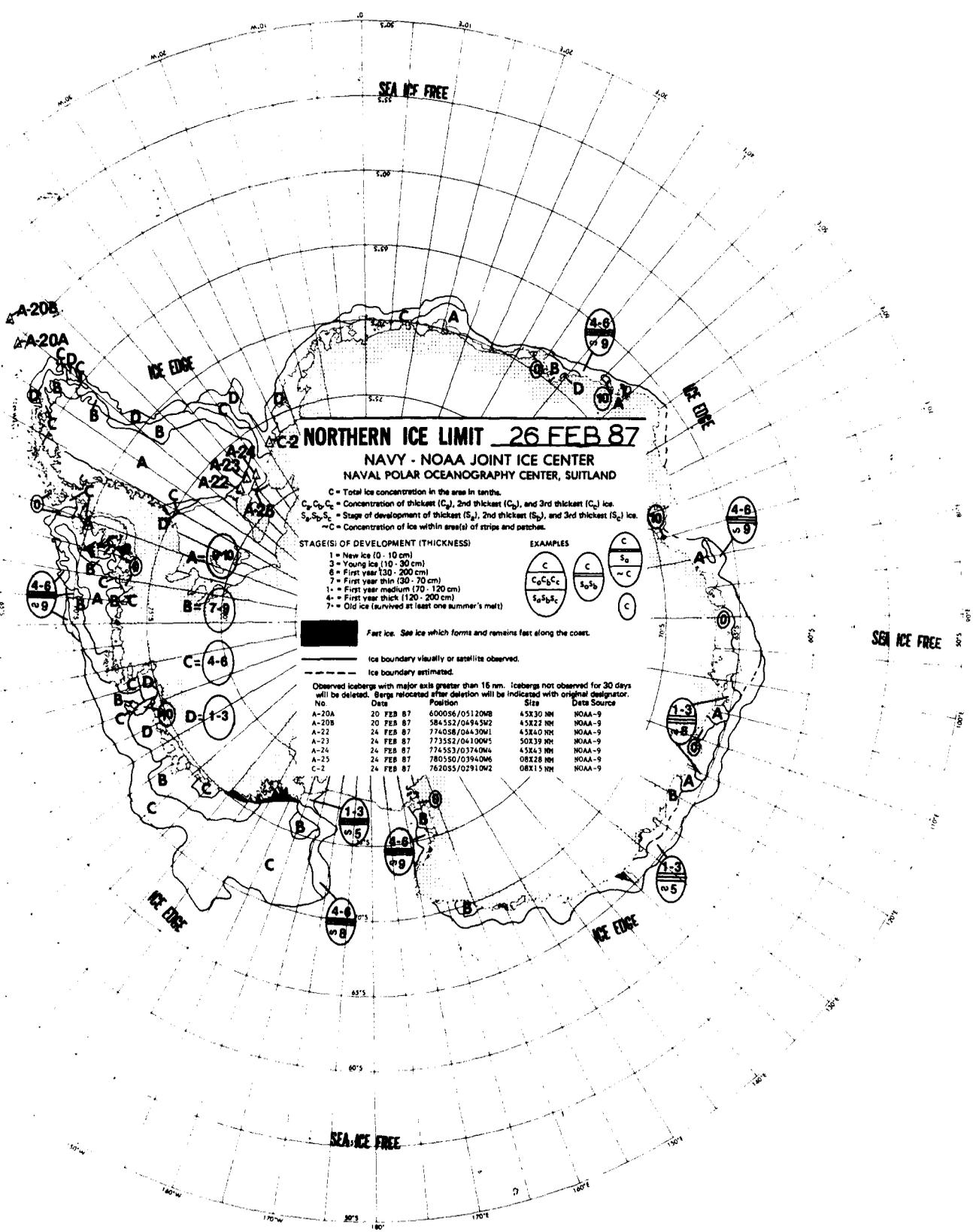
Fast ice. See ice which forms and remains fast along the coast.

Ice boundary visually or satellite observed.

Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	20 FEB 87	600056/05120NR	45X30 NM	NOAA-9
A-20B	20 FEB 87	584552/04945W2	43X22 NM	NOAA-9
A-22	24 FEB 87	774058/04430M1	45X40 NM	NOAA-9
A-23	24 FEB 87	773552/04400M5	50X39 NM	NOAA-9
A-24	24 FEB 87	774553/03740M4	45X43 NM	NOAA-9
A-25	24 FEB 87	780550/03940M	08X28 NM	NOAA-9
C-2	24 FEB 87	762055/02910M2	08X15 NM	NOAA-9



NORTHERN ICE LIMIT 26 FEB 87

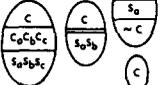
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within area(s) of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year thin (30 - 70 cm)
- 4 = First year medium (70 - 120 cm)
- 5 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



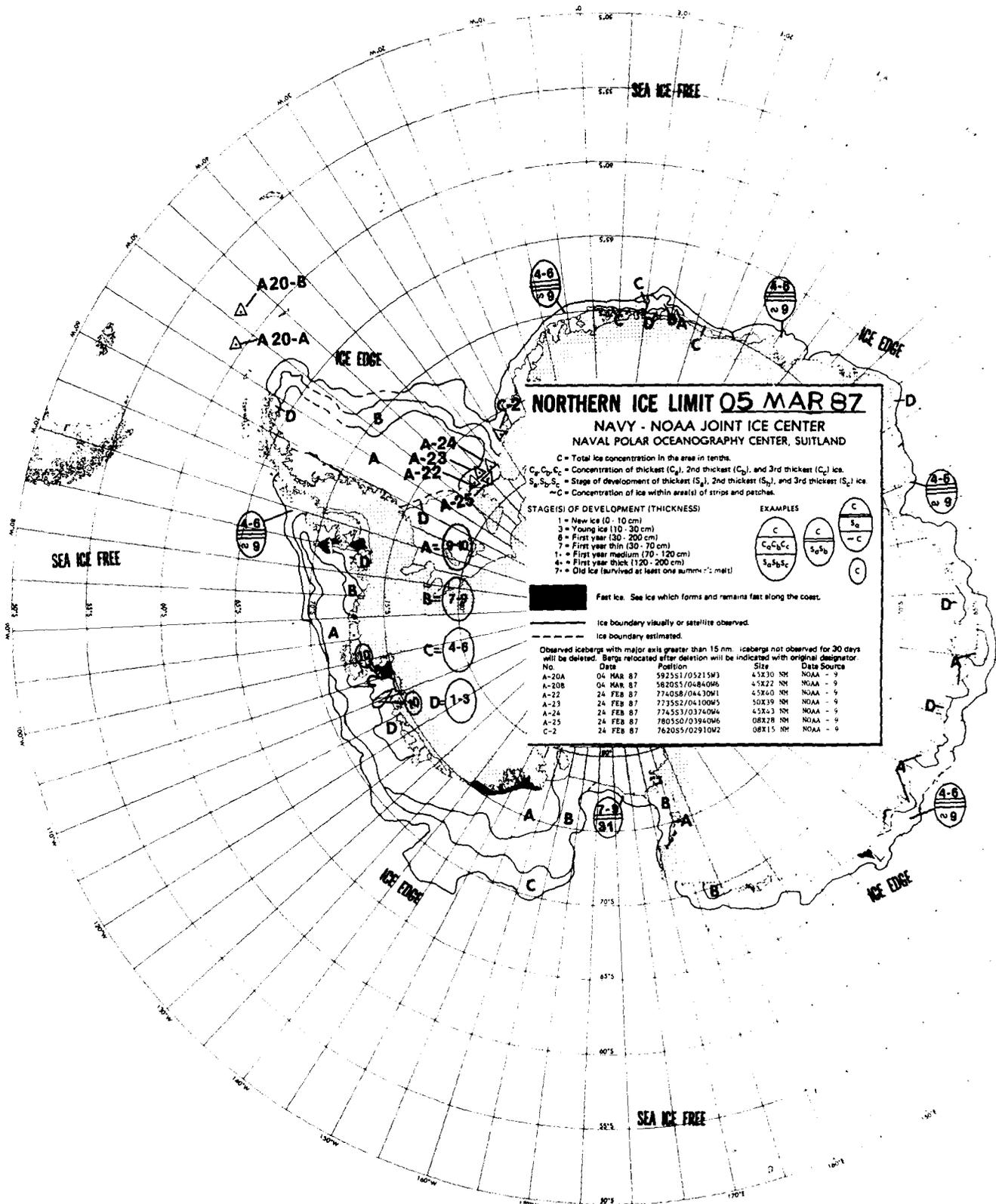
Fast ice: See ice which forms and remains fast along the coast.

— ice boundary visually or satellite observed.

- - - ice boundary estimated.

Observed icebergs with major axis greater than 16 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	20 FEB 87	600056/05120N8	45X30 NM	NOAA-9
A-20B	20 FEB 87	584552/04945W2	45X22 NM	NOAA-9
A-22	24 FEB 87	774058/04430W1	45X40 NM	NOAA-9
A-23	24 FEB 87	773553/04100W5	50X39 NM	NOAA-9
A-24	24 FEB 87	774553/03740W6	45X43 NM	NOAA-9
A-25	24 FEB 87	780550/03940W6	08X28 NM	NOAA-9
C-2	24 FEB 87	762055/02910W2	08X15 NM	NOAA-9



NORTHERN ICE LIMIT 05 MAR 87

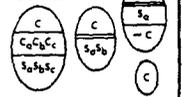
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 $\sim C$ = Concentration of ice within area(s) of strips and patches.

STAGES (OF DEVELOPMENT) (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

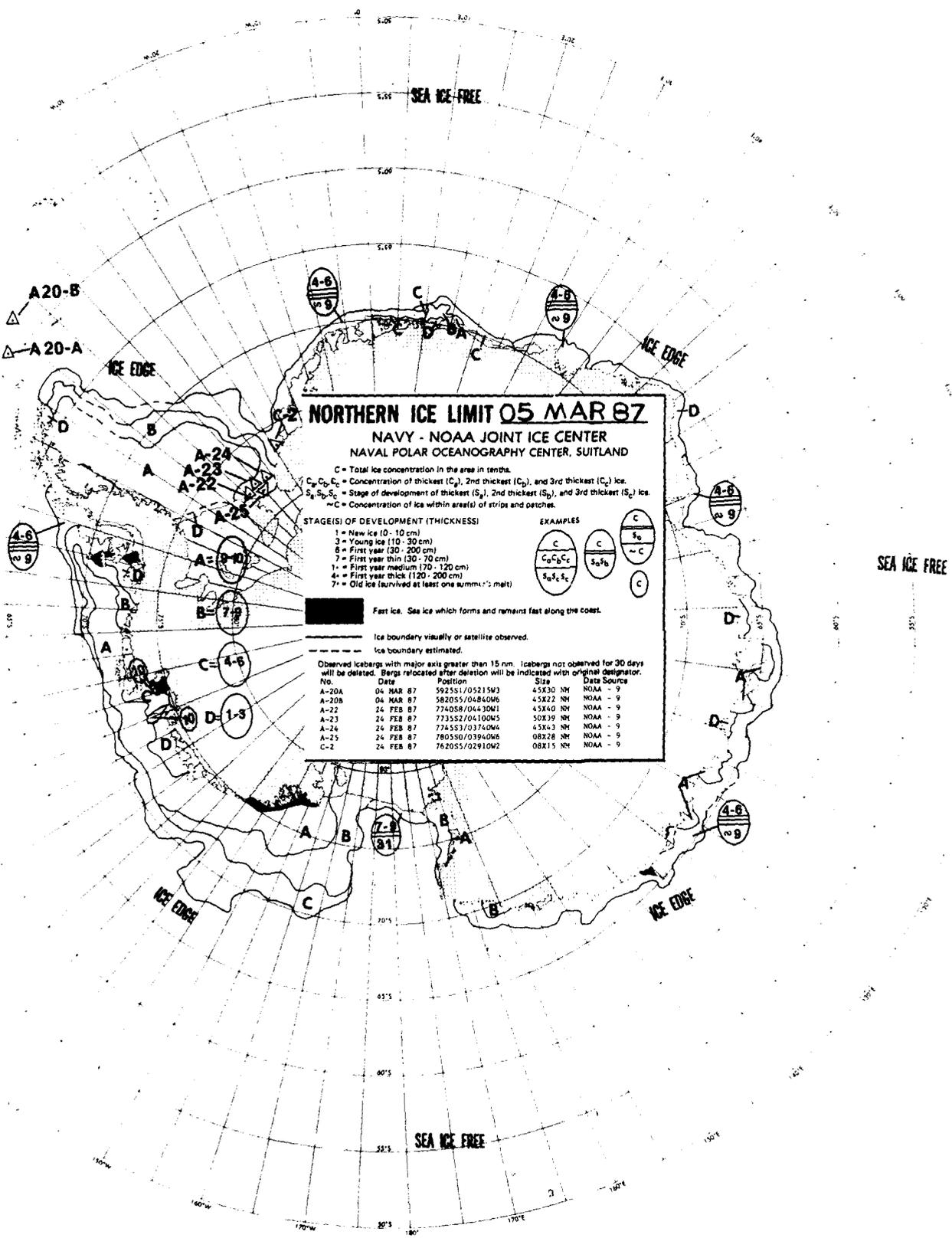
EXAMPLES



- Fast ice. See ice which forms and remains fast along the coast.
- Ice boundary visually or satellite observed.
- Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	04 MAR 87	592551/05215W3	43X30 NM	NOAA - 9
A-20B	04 MAR 87	582055/04840W6	45X22 NM	NOAA - 9
A-22	24 FEB 87	774058/04430W1	45X60 NM	NOAA - 9
A-23	24 FEB 87	773552/04100W5	50X39 NM	NOAA - 9
A-24	24 FEB 87	774553/03740W4	45X63 NM	NOAA - 9
A-25	24 FEB 87	780550/03940W6	08X28 NM	NOAA - 9
C-2	24 FEB 87	762055/02910W2	08X15 NM	NOAA - 9



NORTHERN ICE LIMIT 05 MAR 87

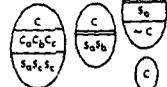
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (10 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



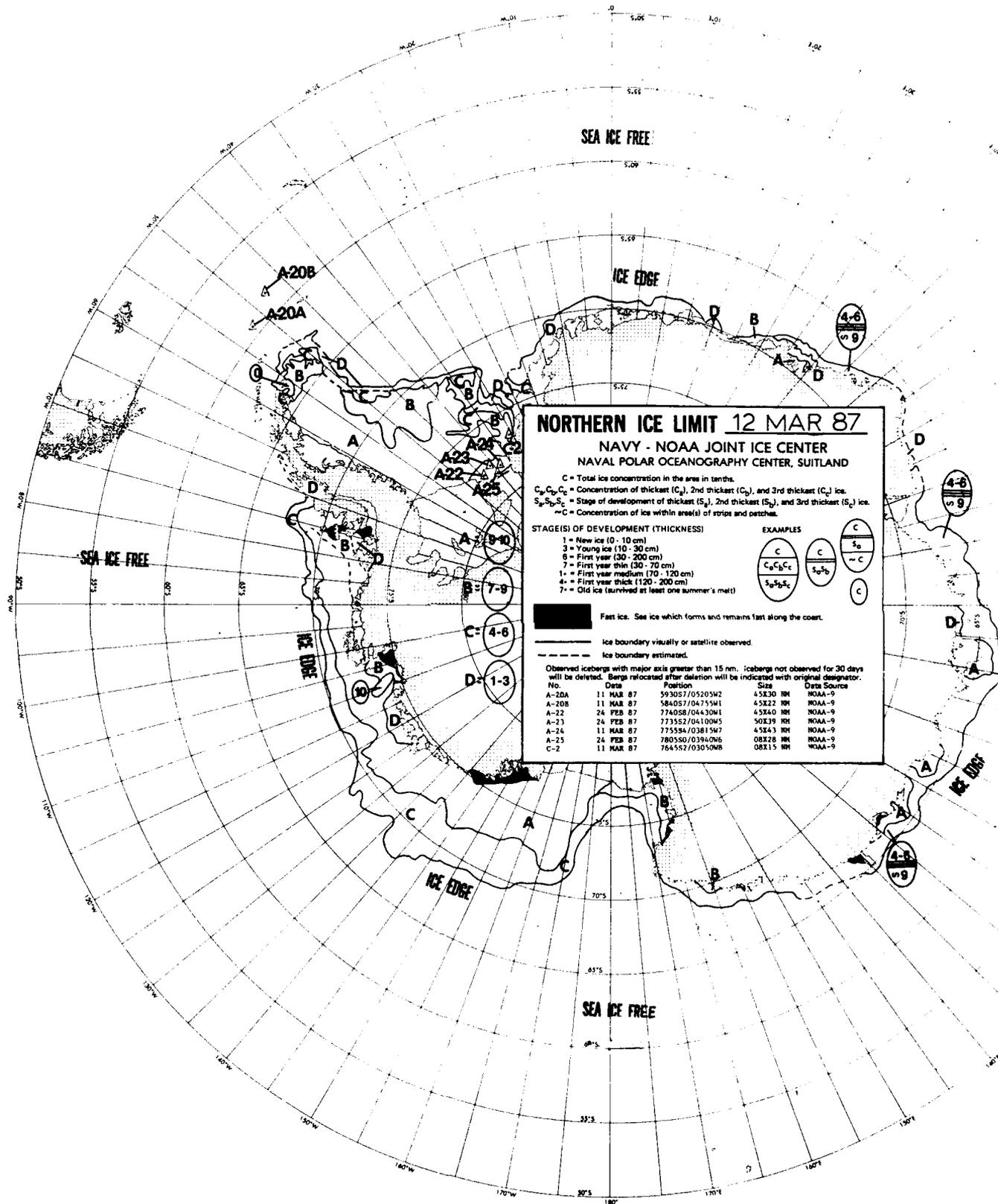
Fast ice. Sea ice which forms and remains fast along the coast.

Ice boundary visually or satellite observed.

Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	04 MAR 87	592551/05215M3	45X30 NM	NOAA - 9
A-20B	04 MAR 87	582055/04840M6	45X22 NM	NOAA - 9
A-22	24 FEB 87	774058/04430M1	45X60 NM	NOAA - 9
A-23	24 FEB 87	773552/04100M5	50X39 NM	NOAA - 9
A-24	24 FEB 87	774553/03740M4	45X63 NM	NOAA - 9
A-25	24 FEB 87	780550/03940M6	08X28 NM	NOAA - 9
C-2	24 FEB 87	762055/02910M2	08X15 NM	NOAA - 9



NORTHERN ICE LIMIT 12 MAR 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 $\sim C$ = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (50 - 70 cm)
- 4 = First year medium (70 - 120 cm)
- 5 = First year thick (120 - 200 cm)
- 7+ = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$
 $\frac{S_1 S_2 S_3}{\sim C}$

$\frac{C}{S_1}$
 $\frac{C}{S_2}$
 $\frac{C}{S_3}$

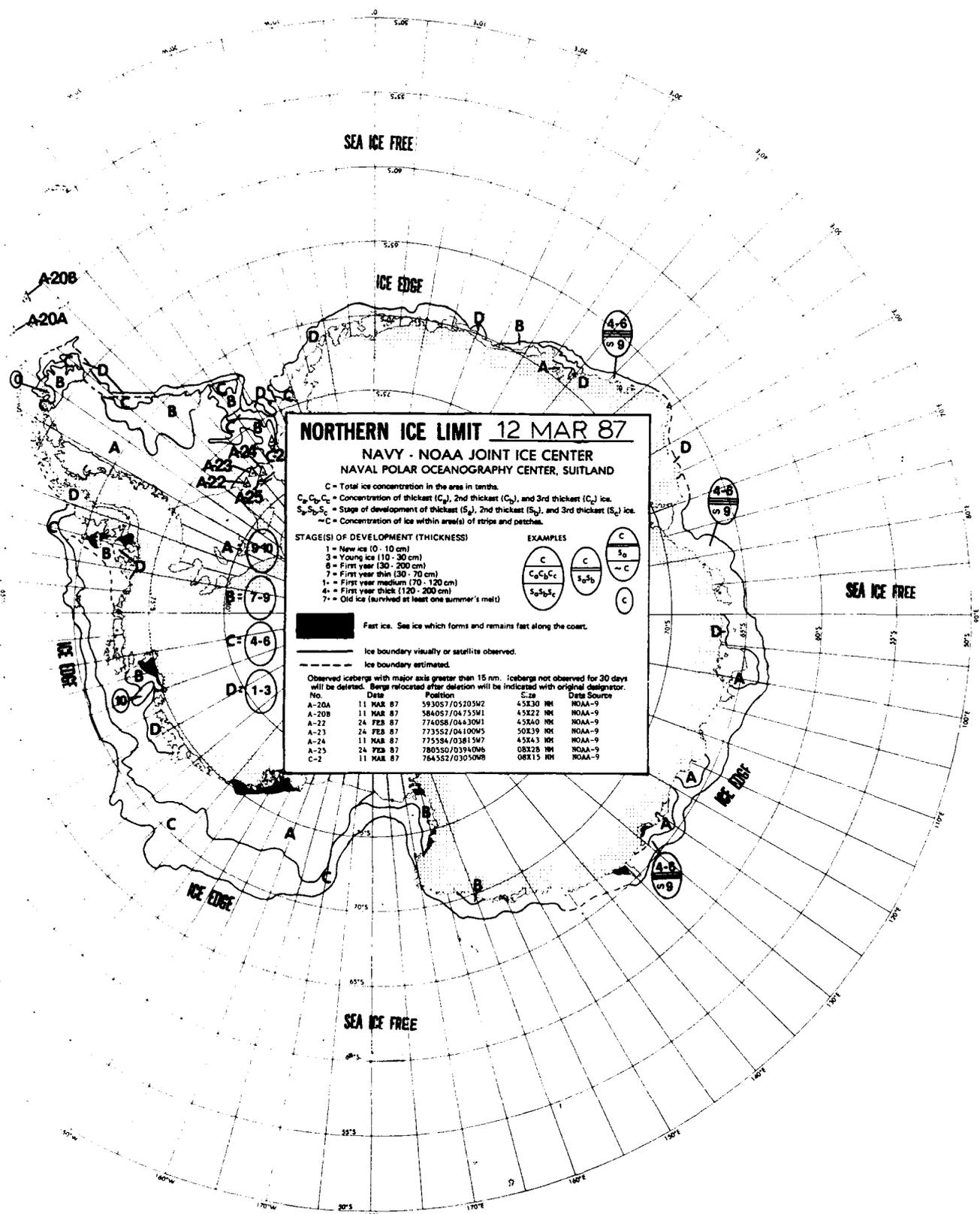
$\frac{C}{\sim C}$

Fast ice. Sea ice which forms and remains fast along the coast.

— Ice boundary visually or satellite observed.
 - - - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	11 MAR 87	593057/0520542	45X30 NM	NOAA-9
A-20B	11 MAR 87	584057/0475541	45X22 NM	NOAA-9
A-22	24 FEB 87	774058/0443041	45X40 NM	NOAA-9
A-23	24 FEB 87	773552/0411045	50X39 NM	NOAA-9
A-24	11 MAR 87	775584/0381547	45X43 NM	NOAA-9
A-25	24 FEB 87	780550/0394046	08X28 NM	NOAA-9
C-2	11 MAR 87	764557/0305048	08X15 NM	NOAA-9



NORTHERN ICE LIMIT 12 MAR 87

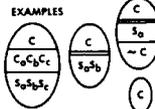
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



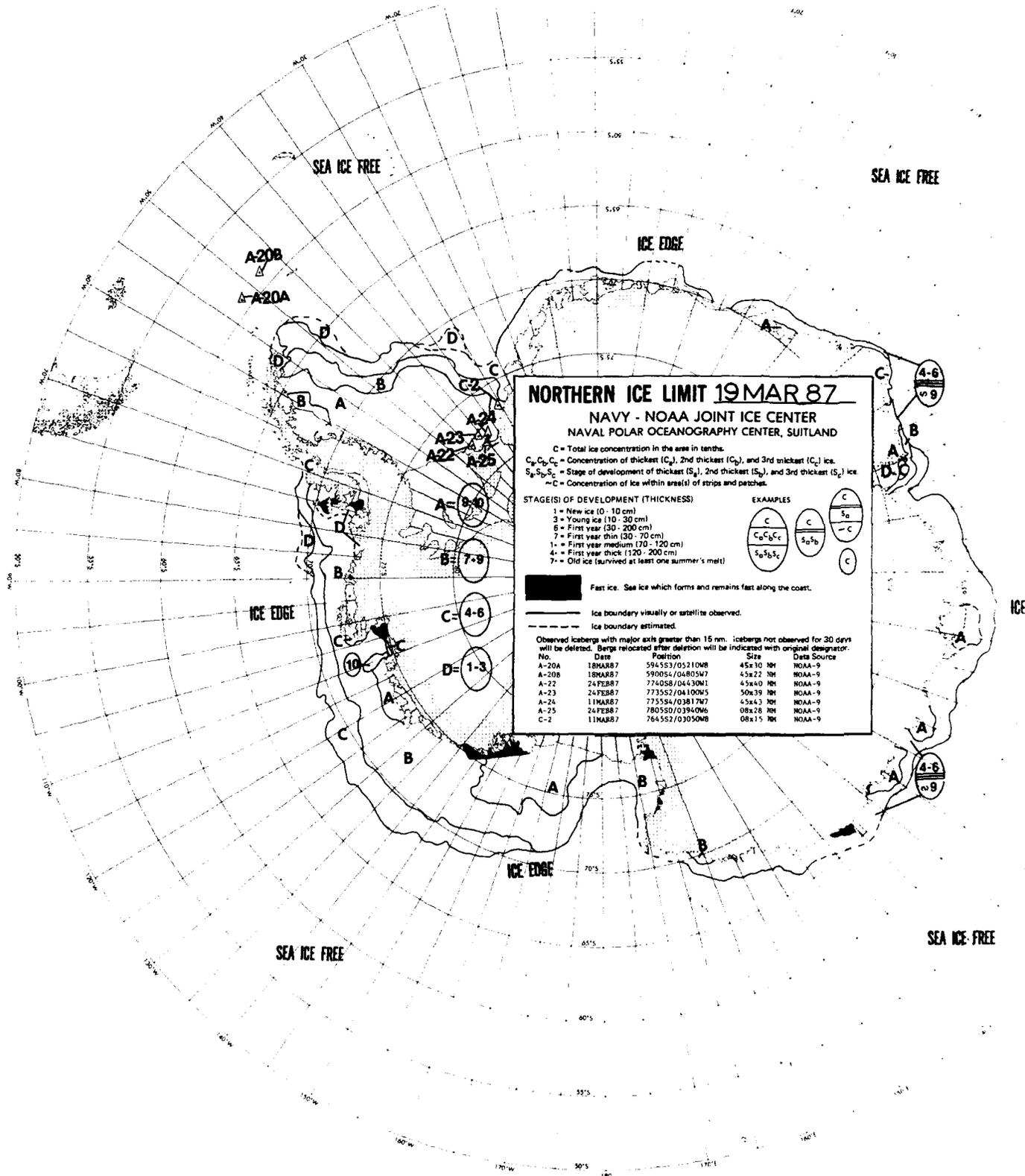
■ Fast ice. See ice which forms and remains fast along the coast.

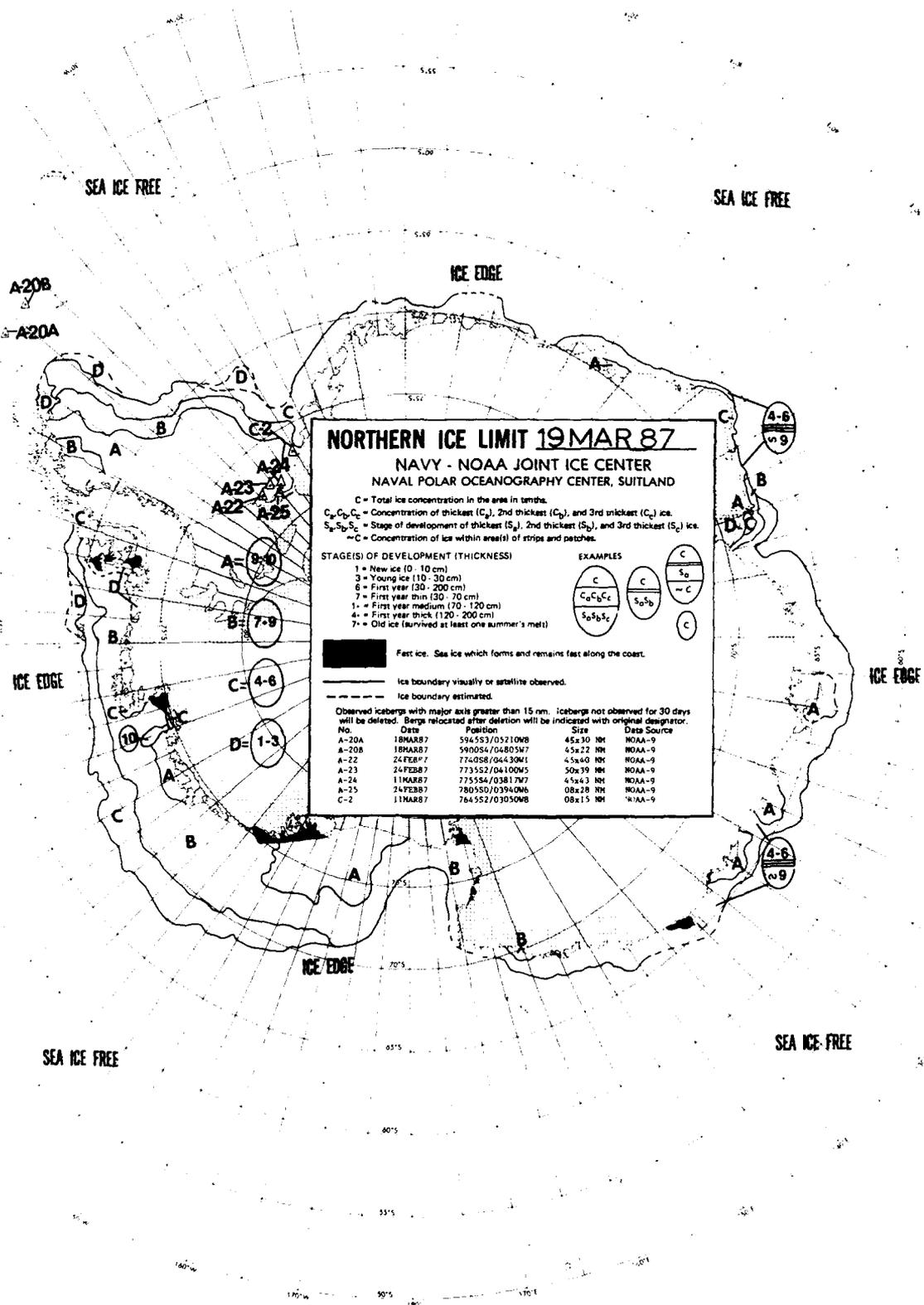
— Ice boundary visually or satellite observed.

- - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	11 MAR 87	593057/0510542	45X30 NM	NOAA-9
A-20B	11 MAR 87	584057/04755M1	45X22 NM	NOAA-9
A-22	24 FEB 87	774058/04430M1	45X60 NM	NOAA-9
A-23	24 FEB 87	773552/04100M5	50X39 NM	NOAA-9
A-24	11 MAR 87	775594/03815M7	45X43 NM	NOAA-9
A-25	24 FEB 87	780550/03940M6	08X28 NM	NOAA-9
C-2	11 MAR 87	764552/03050M8	08X13 NM	NOAA-9





NORTHERN ICE LIMIT 19 MAR 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 a, b = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year thin (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$
 $\frac{S_1 S_2 S_3}{a b}$

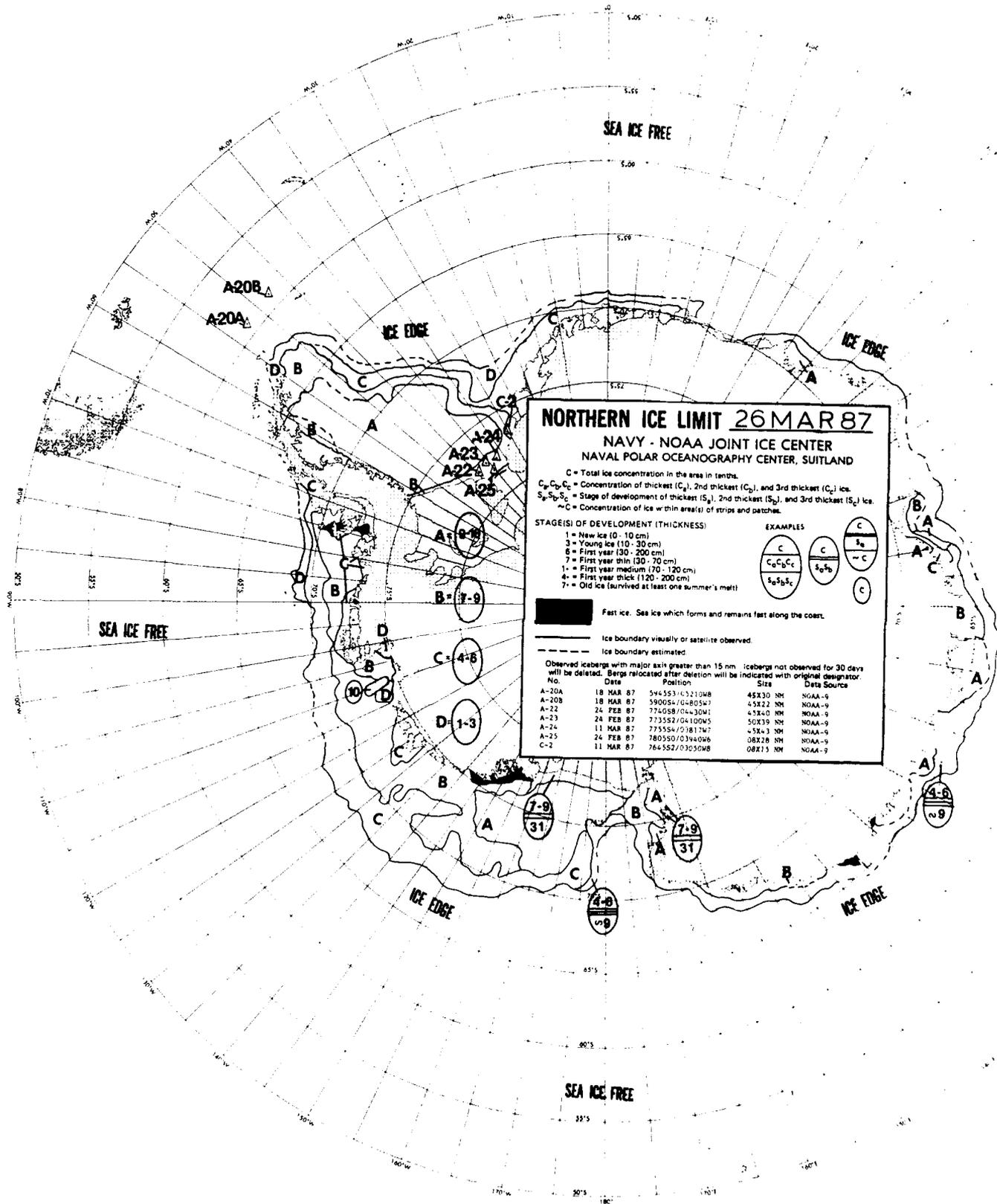
$\frac{C}{S_1 a}$
 $\frac{C}{S_2 b}$

$\frac{C}{C}$

Fast ice: Sea ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed.
 Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	18MAR87	594553/052109B	45x30 NM	NOAA-9
A-20B	18MAR87	590054/0480547	45x22 NM	NOAA-9
A-22	24FEB87	774058/0443041	45x40 NM	NOAA-9
A-23	24FEB87	773552/0410045	50x39 NM	NOAA-9
A-24	11MAR87	775554/0381747	45x43 NM	NOAA-9
A-25	24FEB87	780550/0394046	08x28 NM	NOAA-9
C-2	11MAR87	784552/030504B	08x15 NM	*IAA-9



NORTHERN ICE LIMIT 26 MAR 87

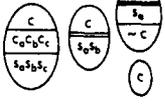
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

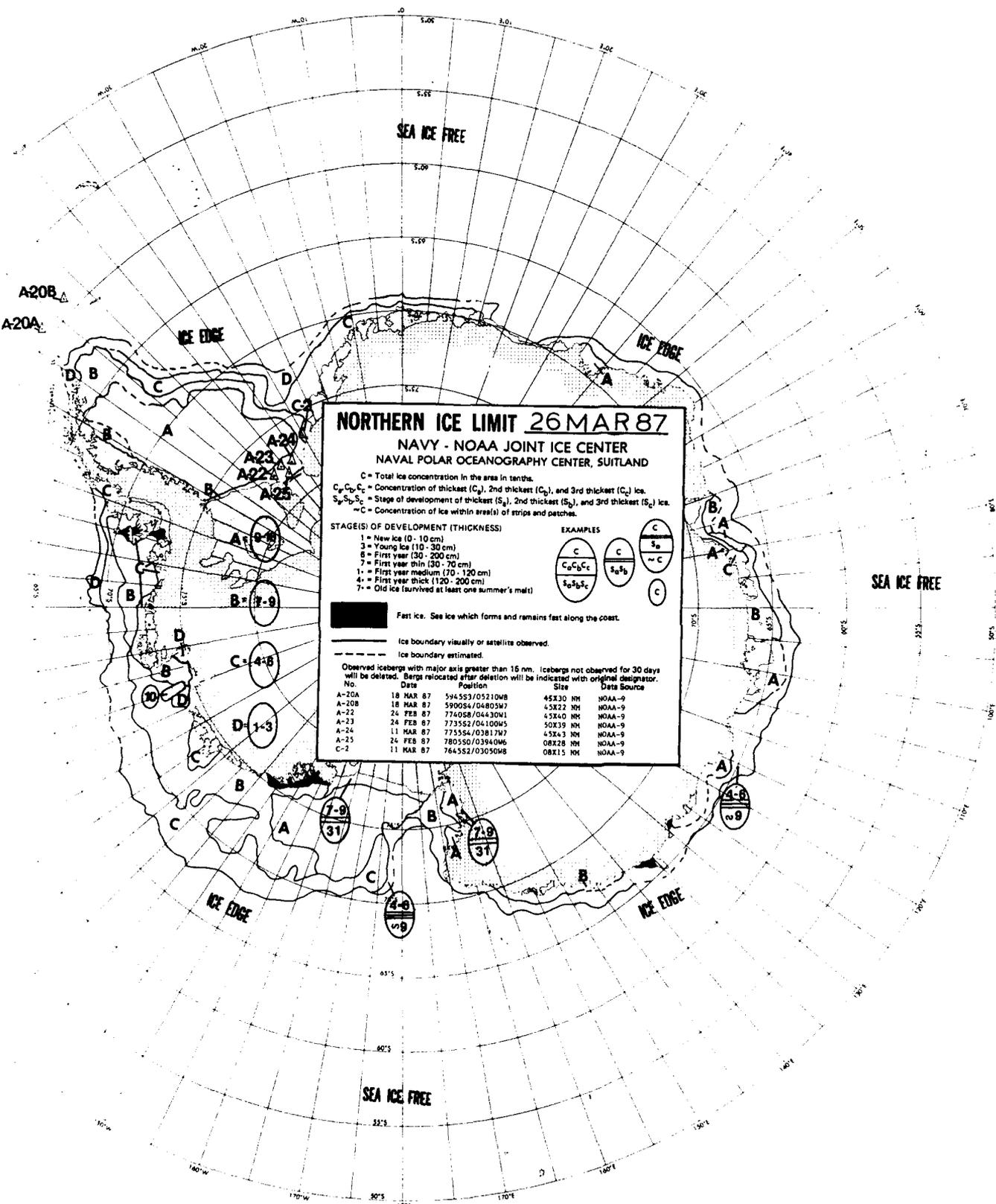
EXAMPLES



Fast ice. Sea ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed.
 Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20a	18 MAR 87	546553/05210W8	45X30 NM	NOAA-9
A-20b	18 MAR 87	590054/04805W7	45X22 NM	NOAA-9
A-22	24 FEB 87	774058/04430W1	45X40 NM	NOAA-9
A-23	24 FEB 87	773552/04105W5	50X39 NM	NOAA-9
A-24	11 MAR 87	775554/03817W7	45X43 NM	NOAA-9
A-25	24 FEB 87	780550/03440W6	08X28 NM	NOAA-9
C-2	11 MAR 87	764552/03050W8	08X13 NM	NOAA-9



NORTHERN ICE LIMIT 26 MAR 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 - C = Concentration of ice within area(s) of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 5 = First year thin (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$
 $\frac{S_1 S_2 S_3}{- C}$

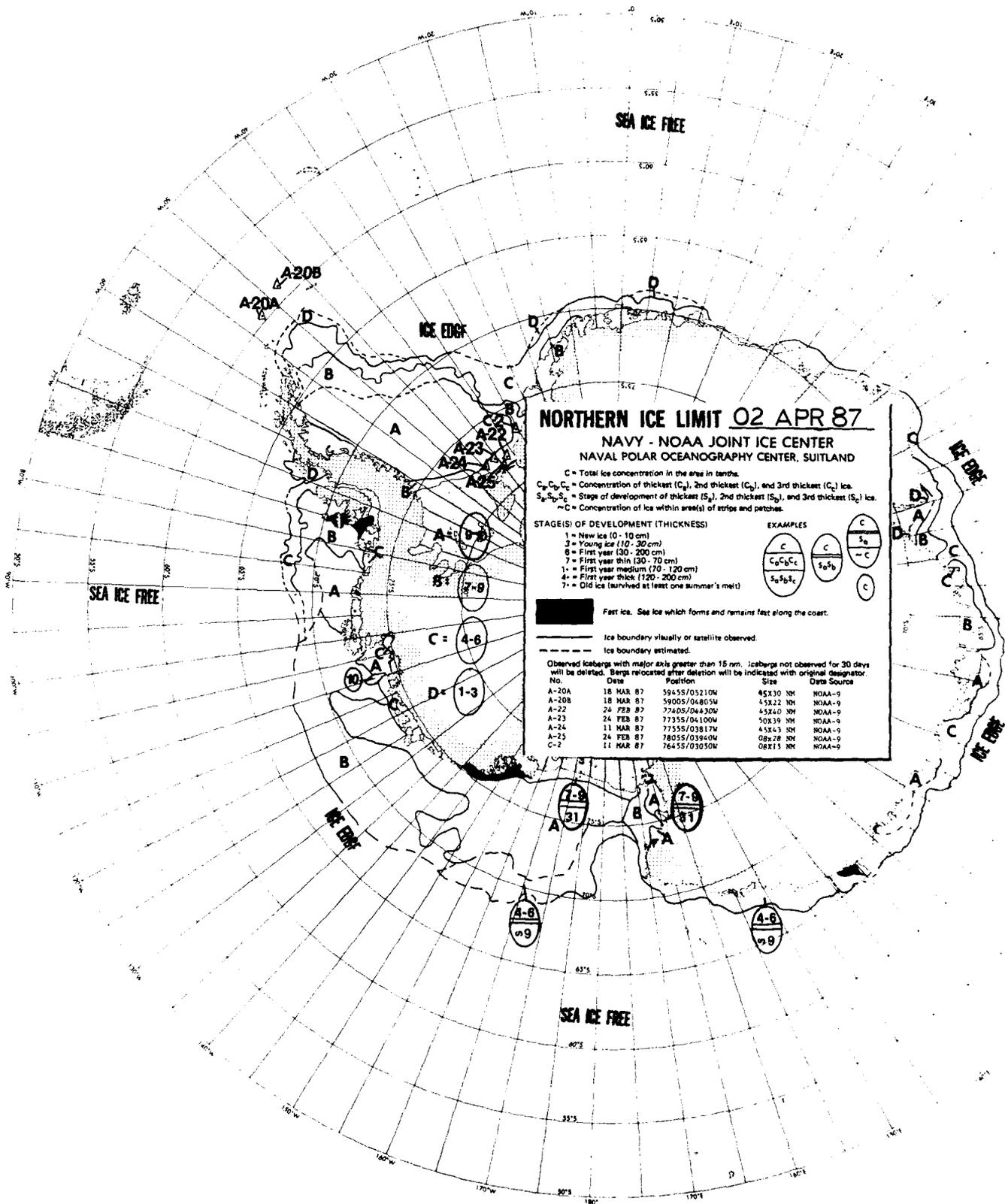
$\frac{C}{S_1 S_2}$
 $\frac{C}{- C}$

$\frac{C}{S_1 S_2 S_3}$
 $\frac{C}{- C}$

Fast ice. See ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed.
 Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	18 MAR 87	594553/0521048	45X30 NM	NOAA-9
A-20B	18 MAR 87	590058/0480307	45X22 NM	NOAA-9
A-22	24 FEB 87	774058/0443041	45X40 NM	NOAA-9
A-23	24 FEB 87	773552/0410045	50X39 NM	NOAA-9
A-24	11 MAR 87	773554/0381747	43X43 NM	NOAA-9
A-25	24 FEB 87	780550/0384046	08X28 NM	NOAA-9
C-2	11 MAR 87	764552/0305048	08X15 NM	NOAA-9



NORTHERN ICE LIMIT 02 APR 87

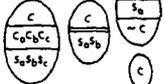
**NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND**

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 - C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 8 = First year (30 - 200 cm)
- 7 = First year thin (30 - 10 cm)
- 4 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



Fast ice. See ice which forms and remains fast along the coast.

Ice boundary visually or satellite observed.

Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Obs Source
A-20A	18 MAR 87	59°55'/05210W	45X10 NM	NOAA-9
A-20B	18 MAR 87	59°05'/04805W	45X22 NM	NOAA-9
A-22	24 FEB 87	77°40S/04830W	45X40 NM	NOAA-9
A-23	24 FEB 87	77°35S/04100W	50X39 NM	NOAA-9
A-24	11 MAR 87	77°55S/03817W	45X6.3 NM	NOAA-9
A-25	24 FEB 87	78°05S/03940W	08x28 NM	NOAA-9
C-2	11 MAR 87	76°55S/03050W	08X15 NM	NOAA-9

SEA ICE FREE

A-20B
A-20A

ICE EDGE

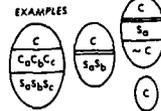
NORTHERN ICE LIMIT 02 APR 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGES (S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year (30 - 200 cm)
- 4 = First year thin (30 - 70 cm)
- 5 = First year medium (70 - 120 cm)
- 6 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)



Fast ice. Sea ice which forms and remains fast along the coast.

Ice boundary visually or satellite observed.

Ice boundary estimated.

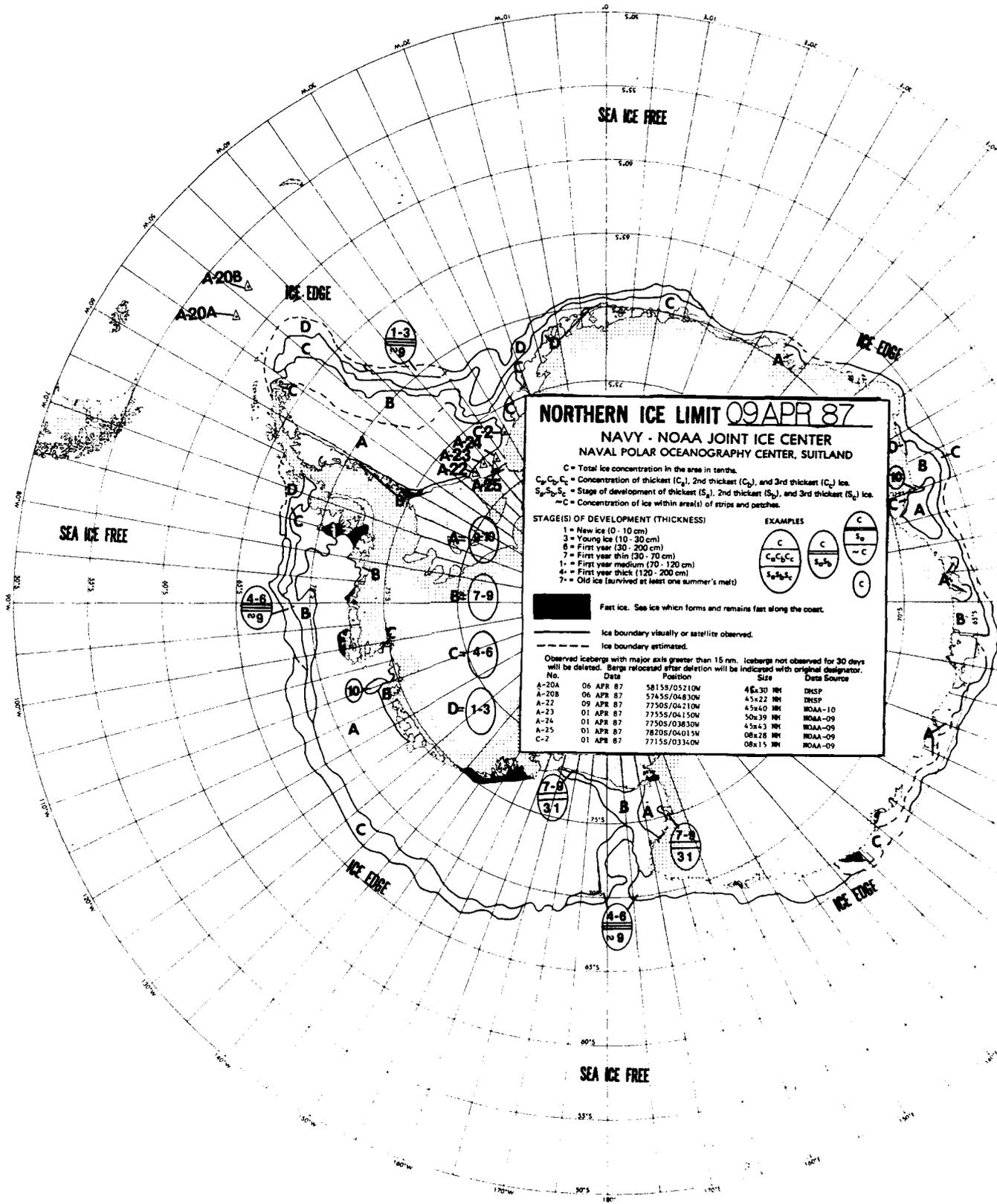
Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	18 MAR 87	59435/05210W	45X30 NM	NOAA-9
A-20B	18 MAR 87	59005/04805W	45X22 NM	NOAA-9
A-22	24 FEB 87	77405/04430W	45X40 NM	NOAA-9
A-23	24 FEB 87	77355/04100W	50X39 NM	NOAA-9
A-24	11 MAR 87	77535/03817W	45X43 NM	NOAA-9
A-25	24 FEB 87	78035/03940W	08X28 NM	NOAA-9
C-2	11 MAR 87	76455/03050W	08X15 NM	NOAA-9

SEA ICE FREE

SEA ICE FREE

ICE EDGE



NORTHERN ICE LIMIT 09 APR 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$
 $\frac{S_1 S_2 S_3}{-C}$

$\frac{C}{S_1}$
 $\frac{C}{S_2}$
 $\frac{C}{S_3}$

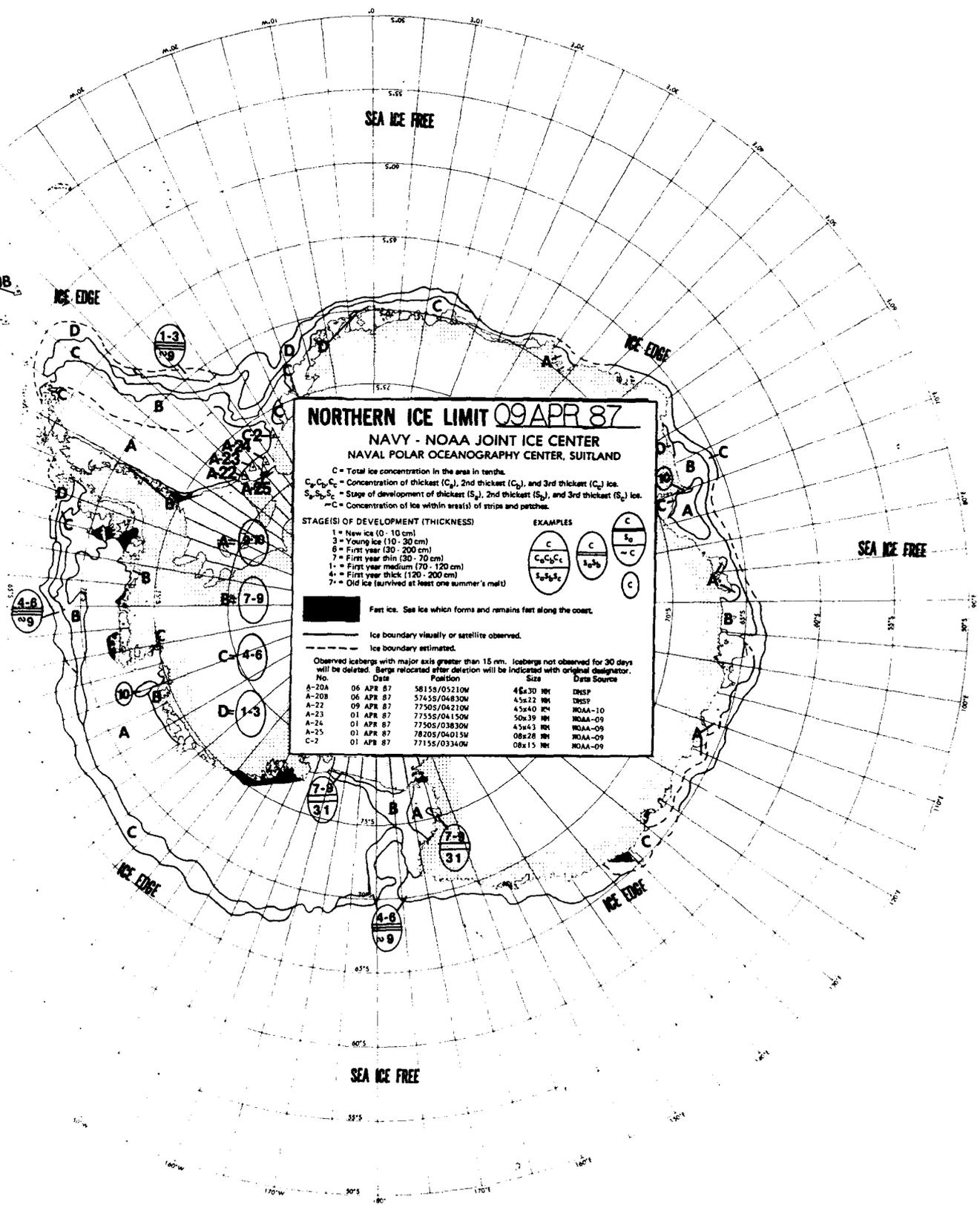
$\frac{C}{-C}$
 $\frac{C}{-C}$
 $\frac{C}{-C}$

■ Fast ice. See ice which forms and remains fast along the coast.
 --- Ice boundary visually or satellite observed.
 - - - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	06 APR 87	58158/05210M	4E x 30 NM	IKNSP
A-20B	06 APR 87	57455/04830M	4.5 x 22 NM	IKNSP
A-22	09 APR 87	77505/04210M	4.5 x 60 NM	NOAA-10
A-23	01 APR 87	77555/04150M	50 x 39 NM	NOAA-09
A-24	01 APR 87	77505/03830M	4.5 x 43 NM	NOAA-09
A-25	01 APR 87	78205/04015M	08 x 28 NM	NOAA-09
C-2	01 APR 87	77155/03340M	08 x 15 NM	NOAA-09

A-20B
DA



NORTHERN ICE LIMIT 09 APR 87
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

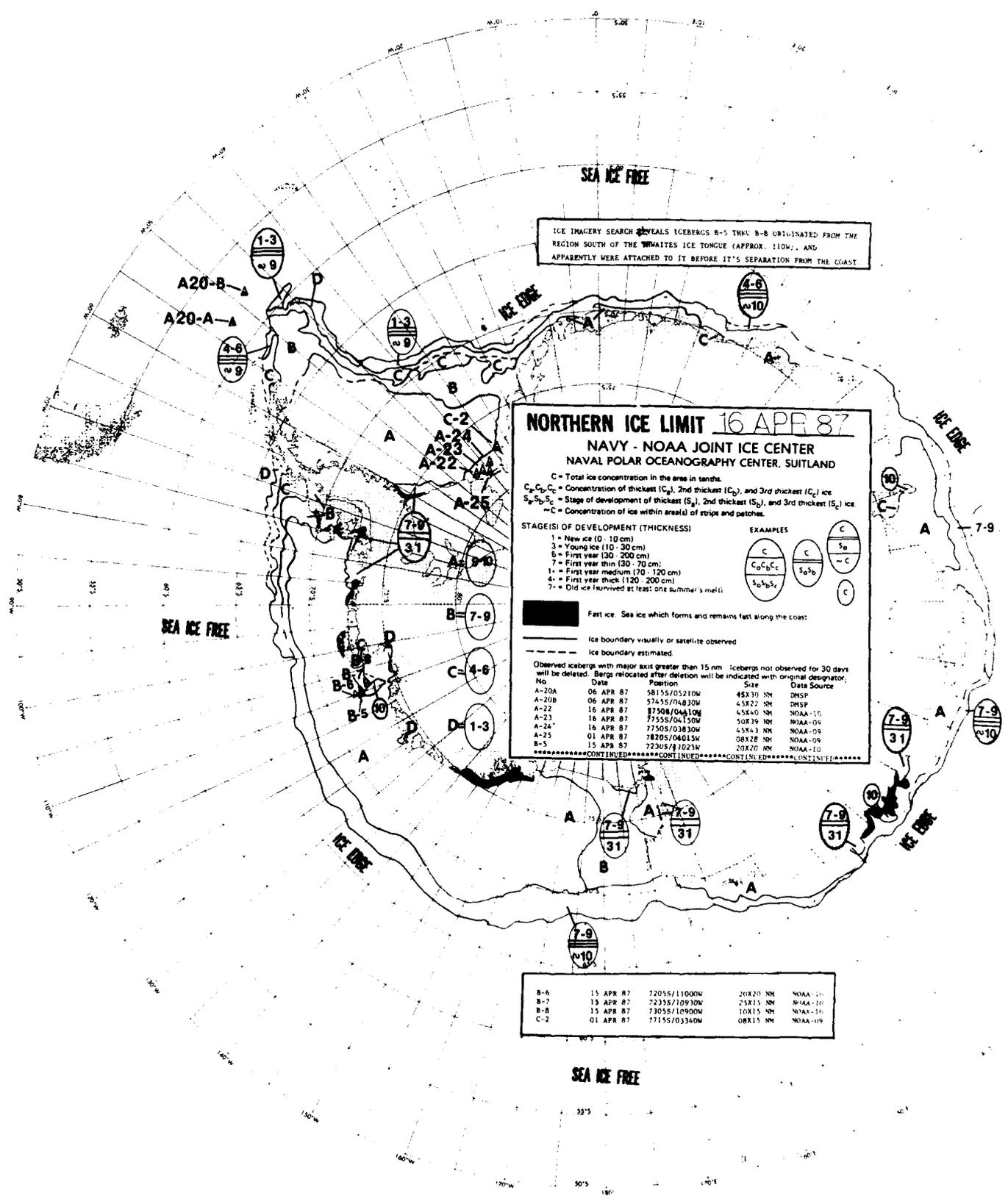
- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year thin (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{S_1 S_2 S_3}$ $\frac{C}{S_1 S_2}$ $\frac{C}{S_1}$
 $\frac{C_1 C_2 C_3}{S_1 S_2 S_3}$ $\frac{C}{S_1 S_2}$ $\frac{C}{S_1}$

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	06 APR 87	58158/05210W	46x30 NM	DNBP
A-20B	06 APR 87	57455/04830W	45x22 NM	DNBP
A-22	09 APR 87	77505/04210W	45x40 NM	NOAA-10
A-23	01 APR 87	77555/04150W	50x39 NM	NOAA-09
A-24	01 APR 87	77505/03830W	45x43 NM	NOAA-09
A-25	01 APR 87	78205/04015W	08x28 NM	NOAA-09
C-2	01 APR 87	77158/03340W	08x15 NM	NOAA-09

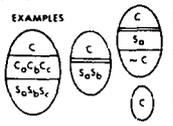


ICE IMAGERY SEARCH REVEALS ICEBERGS B-5 THRU B-8 ORIGINATED FROM THE REGION SOUTH OF THE WHITTIES ICE TONGUE (APPROX. 110W), AND APPARENTLY WERE ATTACHED TO IT BEFORE IT'S SEPARATION FROM THE COAST

NORTHERN ICE LIMIT 16 APR 87
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

- STAGES OF DEVELOPMENT (THICKNESS)
- 1 = New ice (0 - 10 cm)
 - 3 = Young ice (10 - 30 cm)
 - 6 = First year thin (30 - 200 cm)
 - 7 = First year thin (30 - 70 cm)
 - 1 = First year medium (70 - 120 cm)
 - 4 = First year thick (120 - 200 cm)
 - 7 = Old ice (survived at least one summer's melt)



Fast ice Sea ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed
 Ice boundary estimated

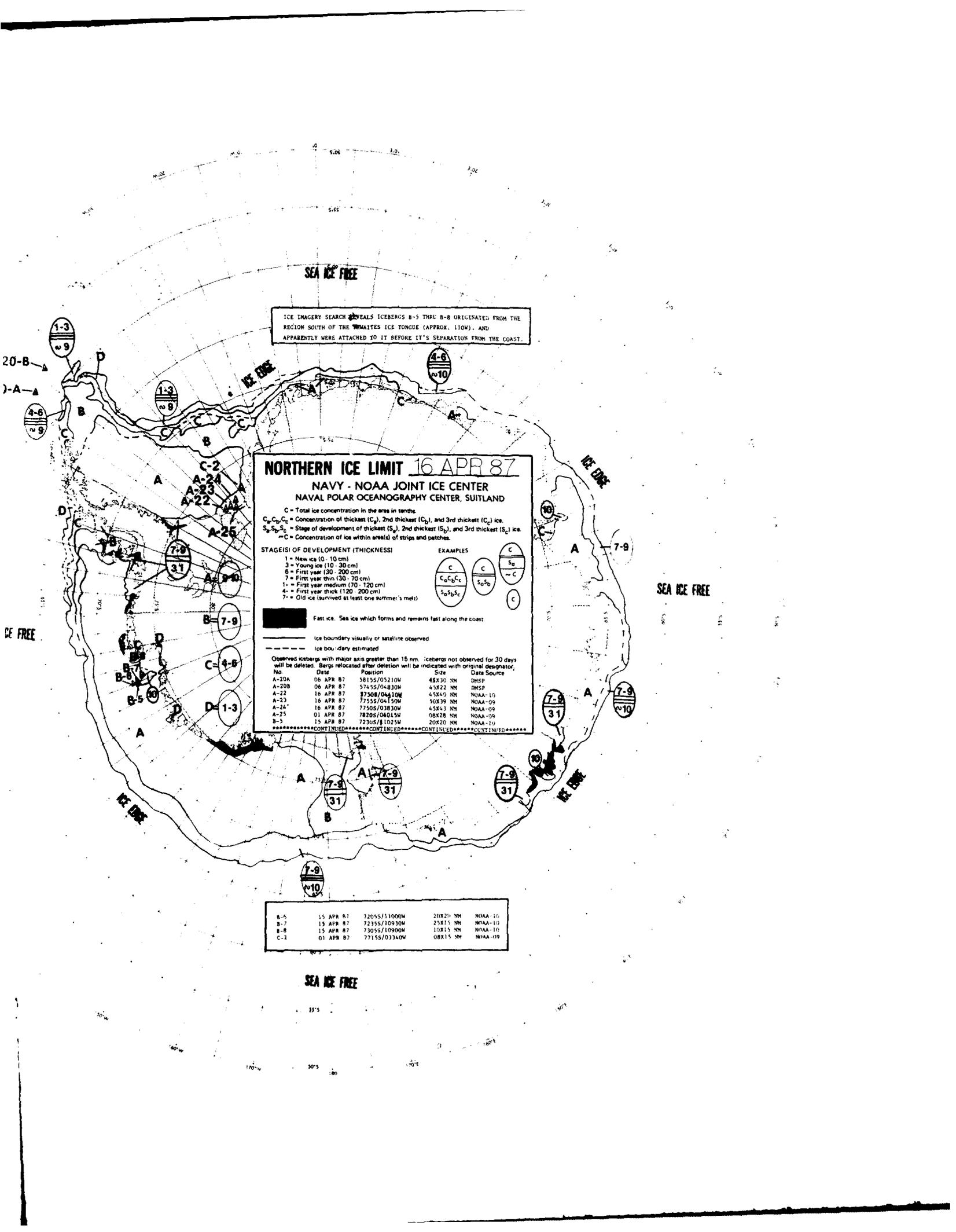
Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Date Source
A-20A	06 APR 87	58155/05210W	45X30 NM	DNPS
A-20B	06 APR 87	57455/04830W	45X22 NM	DNPS
A-22	16 APR 87	81508/04410W	45X40 NM	NOAA-10
A-23	16 APR 87	77555/04150W	50X39 NM	NOAA-09
A-24*	16 APR 87	77505/03830W	45X43 NM	NOAA-09
A-25	01 APR 87	78205/04013W	08X28 NM	NOAA-09
B-5	15 APR 87	72305/1023W	20X20 NM	NOAA-10

*****CONTINUED*****CONTINUED*****CONTINUED*****CONTINUED*****

B-6	15 APR 87	72055/11000W	20X20 NM	NOAA-10
B-7	13 APR 87	72355/10930W	25X15 NM	NOAA-10
B-8	15 APR 87	73055/10900W	10X15 NM	NOAA-10
C-2	01 APR 87	77155/03340W	08X15 NM	NOAA-09

SEA ICE FREE



ICE IMAGERY SEARCH REVEALS ICEBERGS B-5 THRU B-8 ORIGINATED FROM THE REGION SOUTH OF THE WHAITES ICE TONGUE (APPROX. 110W), AND APPARENTLY WERE ATTACHED TO IT BEFORE IT'S SEPARATION FROM THE COAST.

NORTHERN ICE LIMIT 16 APR 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within area(s) of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (10 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

Fast ice: Sea ice which forms and remains fast along the coast

ice boundary visually or satellite observed
 ice boundary estimated

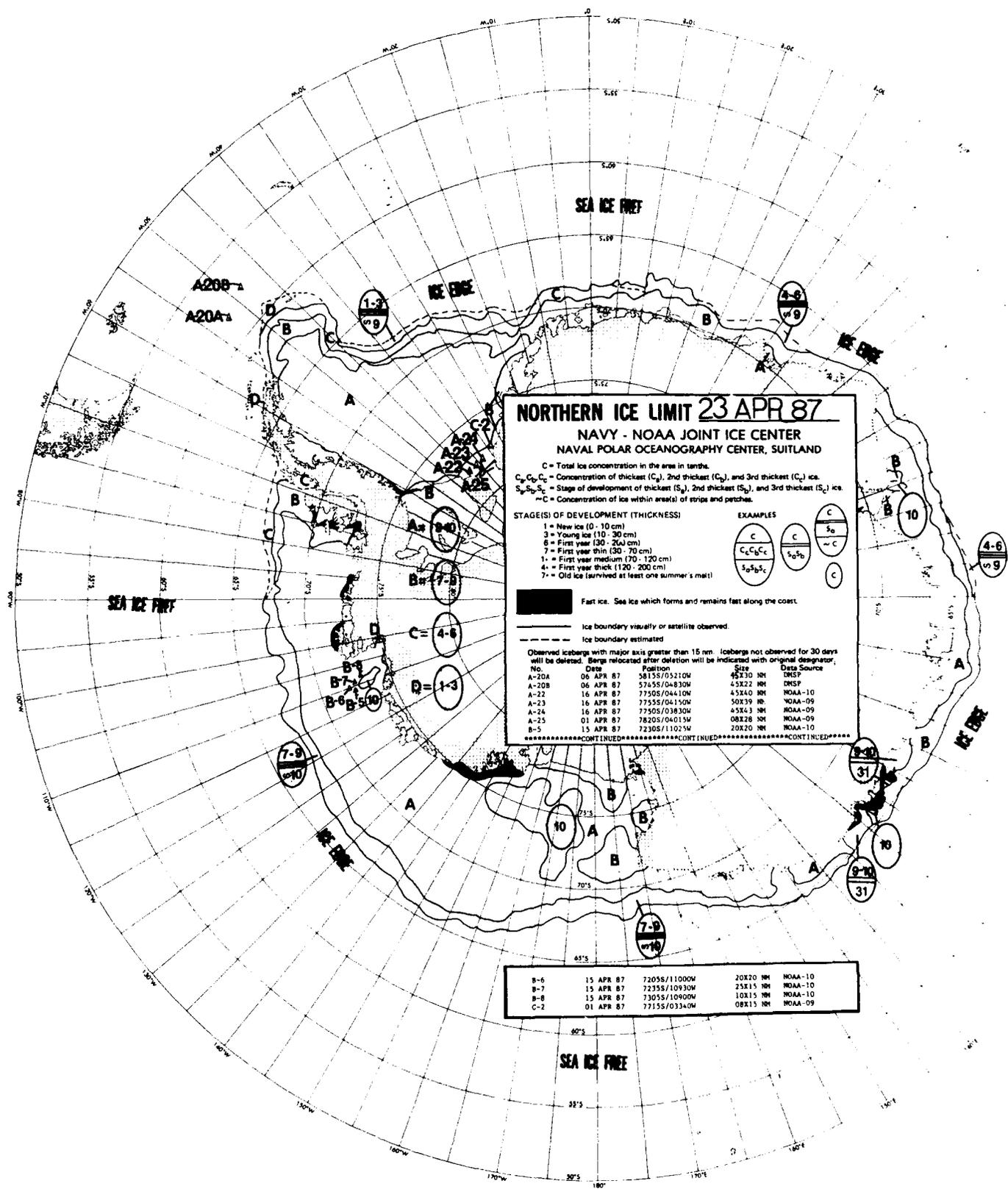
Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Date Source
A-20A	06 APR 87	58155/05210W	45X30 NM	DMSP
A-20B	06 APR 87	57455/04830W	45X22 NM	DMSP
A-22	16 APR 87	87508/04410W	45X49 NM	NOAA-10
A-23	16 APR 87	77555/04150W	50X39 NM	NOAA-09
A-24	16 APR 87	77505/03830W	45X63 NM	NOAA-09
A-25	01 APR 87	78205/04015W	08X28 NM	NOAA-09
B-5	15 APR 87	72305/11025W	20X20 NM	NOAA-10

*****CONTINUED*****CONTINUED*****CONTINUED*****CONTINUED*****

B-6	15 APR 87	72055/11000W	20X20 NM	NOAA-10
B-7	15 APR 87	72355/10930W	25X15 NM	NOAA-10
B-8	15 APR 87	73055/10900W	10X15 NM	NOAA-10
C-2	01 APR 87	77155/03340W	08X15 NM	NOAA-09

SEA ICE FREE



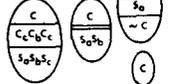
NORTHERN ICE LIMIT 23 APR 87
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

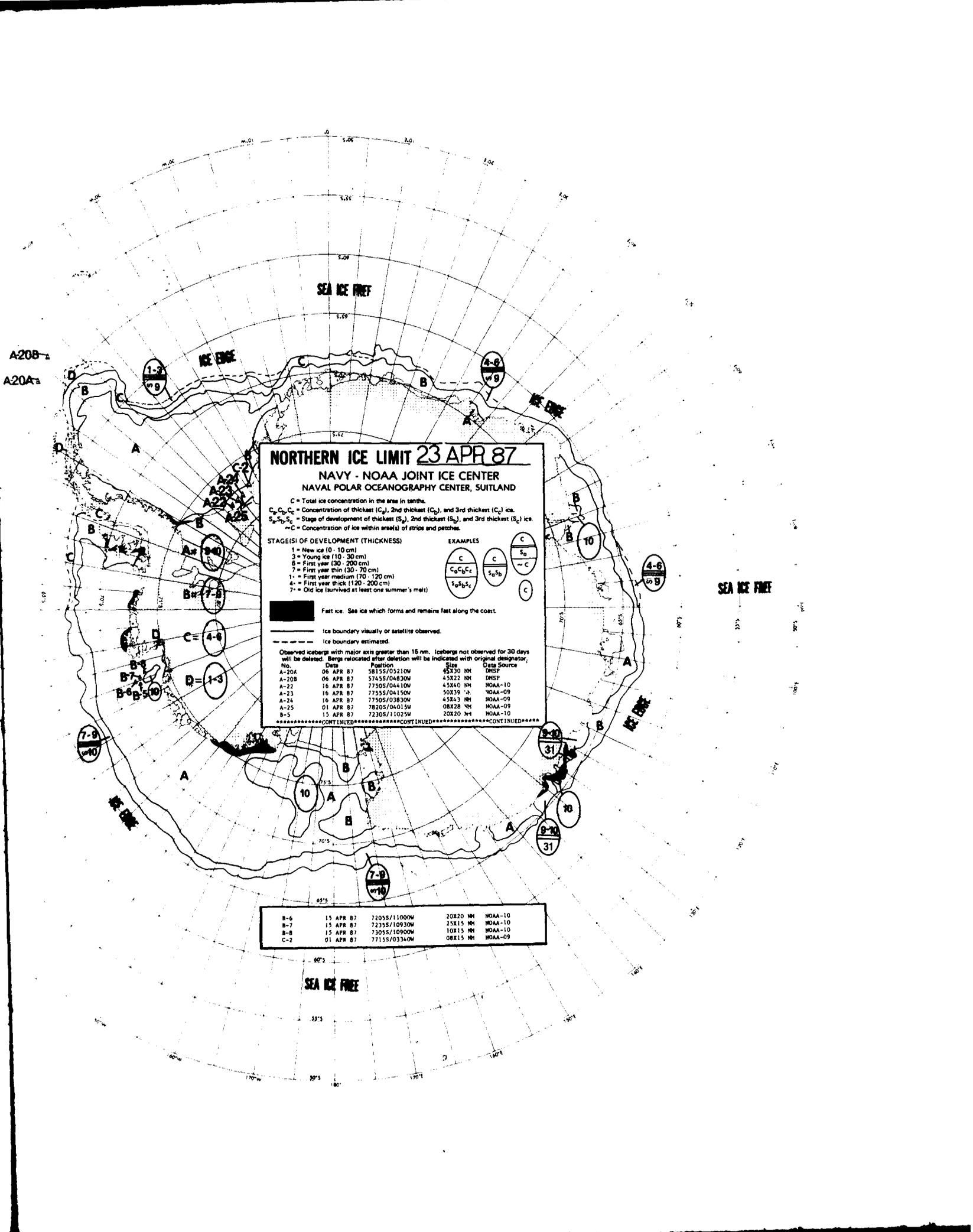


Fast ice. See ice which forms and remains fast along the coast.
 --- ice boundary visually or satellite observed.
 - - - - - ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.
 No. Date Position Size Data Source

A-20A	06 APR 87	5815S/05210W	45X30 NM	DNBP
A-20B	06 APR 87	5745S/04830W	45X22 NM	DNBP
A-22	16 APR 87	7750S/04410W	45X40 NM	NOAA-10
A-23	16 APR 87	7755S/04150W	50X39 NM	NOAA-09
A-24	16 APR 87	7750S/03830W	45X43 NM	NOAA-09
A-25	01 APR 87	7820S/04015W	08X28 NM	NOAA-09
B-5	15 APR 87	7230S/11025W	20X20 NM	NOAA-10

B-6	15 APR 87	7205S/11000W	20X20 NM	NOAA-10
B-7	15 APR 87	7235S/10930W	25X15 NM	NOAA-10
B-8	15 APR 87	7305S/10900W	10X15 NM	NOAA-10
C-2	01 APR 87	7715S/03340W	08X13 NM	NOAA-09



NORTHERN ICE LIMIT 23 APR 87

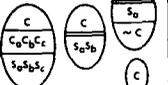
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within area(s) of stripes and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 11 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



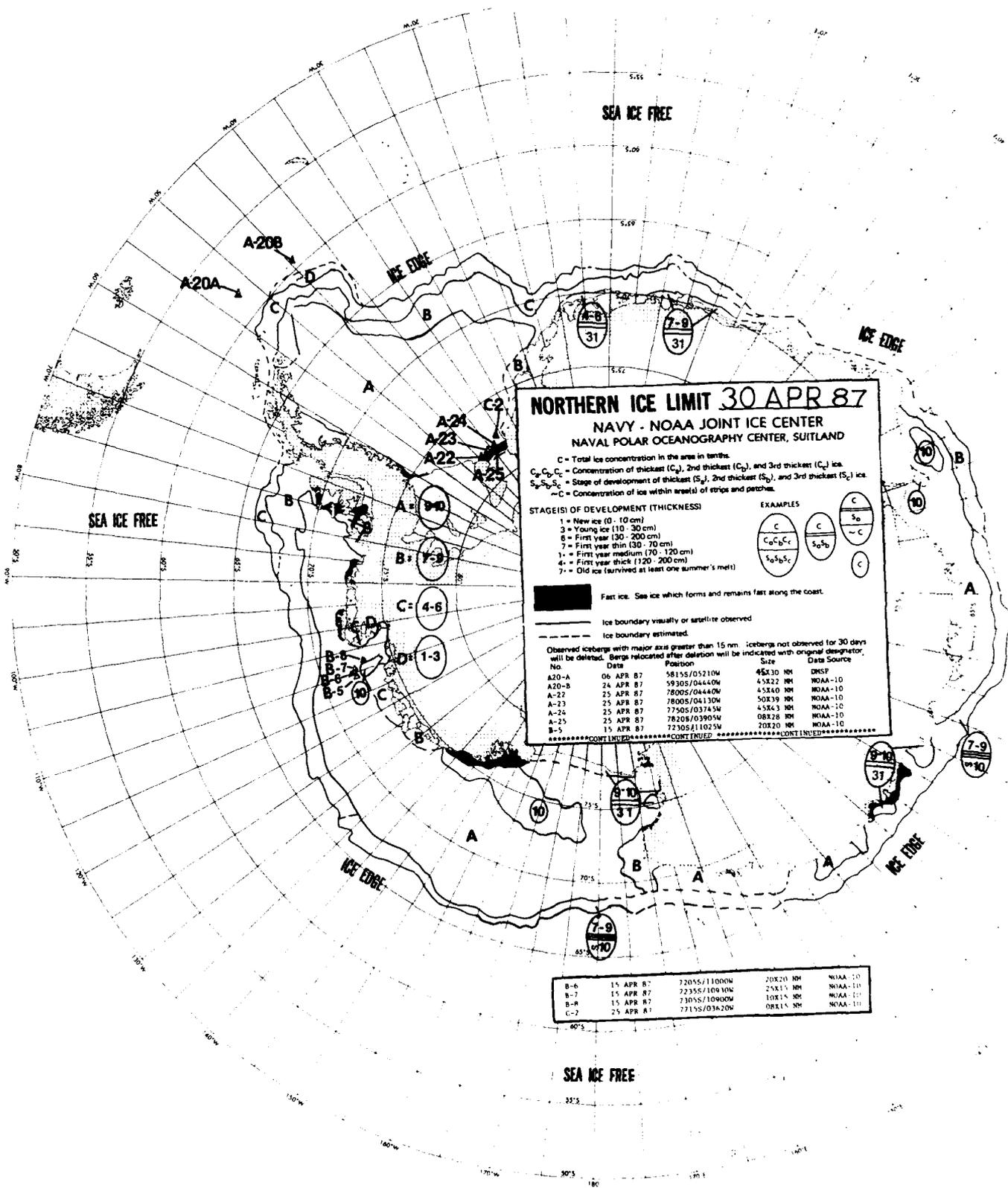
- Fast ice: Sea ice which forms and remains fast along the coast.
- Ice boundary visually or satellite observed.
- Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	06 APR 87	5815S/05210W	45X20 NM	DMSP
A-20B	06 APR 87	5745S/04830W	45X22 NM	DMSP
A-22	16 APR 87	7730S/04410W	45X40 NM	NOAA-10
A-23	16 APR 87	7755S/04150W	50X30 "	NOAA-09
A-24	16 APR 87	7750S/03830W	45X43 NM	NOAA-09
A-25	01 APR 87	7820S/04015W	08X28 NM	NOAA-09
B-5	15 APR 87	7230S/11025W	20X20 NM	NOAA-10

*****CONTINUED*****CONTINUED*****CONTINUED*****

B-6	15 APR 87	7205S/11000W	20X20 NM	NOAA-10
B-7	15 APR 87	7235S/10930W	25X15 NM	NOAA-10
B-8	15 APR 87	7305S/10900W	10X15 NM	NOAA-10
C-2	01 APR 87	5715S/03340W	08X15 NM	NOAA-09

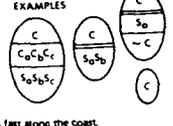


NORTHERN ICE LIMIT 30 APR 87

NAVY - NOAA JOINT ICE CENTER NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areals of strips and patches.

- STAGES OF DEVELOPMENT (THICKNESS)**
- 1 = New ice (10 - 30 cm)
 - 2 = Young ice (30 - 70 cm)
 - 3 = First year thin (30 - 70 cm)
 - 4 = First year medium (70 - 120 cm)
 - 5 = First year thick (120 - 200 cm)
 - 6 = First year thin (30 - 70 cm)
 - 7 = Old ice (survived at least one summer's melt)

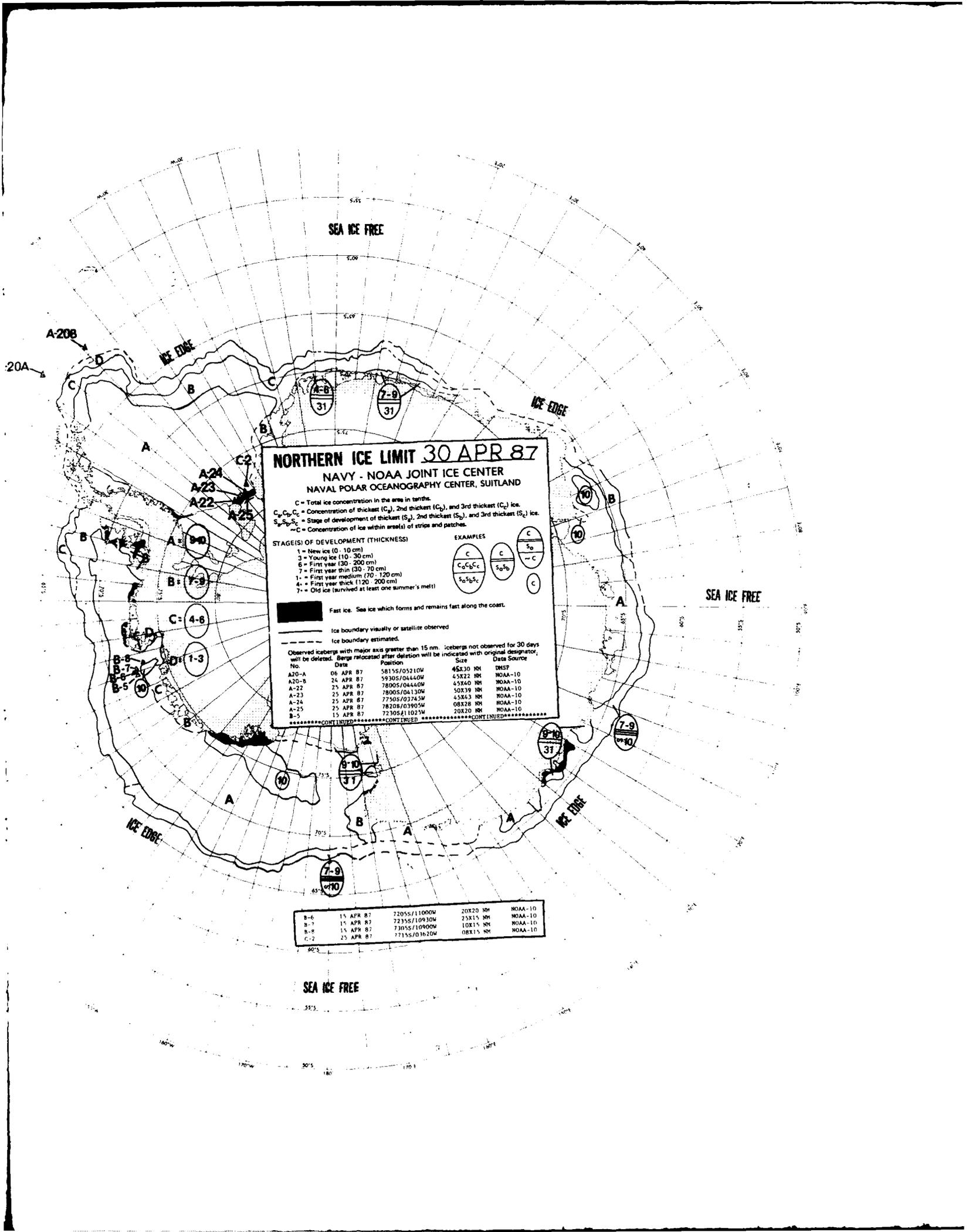


Fast ice. Sea ice which forms and remains fast along the coast.
 --- Ice boundary visually or satellite observed
 - - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A20-A	06 APR 87	5815S/05210W	45X30 NM	DKSP
A20-B	24 APR 87	5930S/04440W	45X22 NM	NOAA-10
A-22	25 APR 87	7800S/04440W	45X40 NM	NOAA-10
A-23	25 APR 87	7800S/04130W	50X39 NM	NOAA-10
A-24	25 APR 87	7750S/03745W	45X63 NM	NOAA-10
A-25	25 APR 87	7820S/03905W	08X28 NM	NOAA-10
B-5	15 APR 87	7230S/11025W	20X20 NM	NOAA-10

B-6	15 APR 87	7205S/11000W	20X20 NM	NOAA-10
B-7	15 APR 87	7235S/10900W	25X15 NM	NOAA-10
B-8	15 APR 87	7305S/10900W	10X15 NM	NOAA-10
C-2	25 APR 87	7715S/03620W	08X15 NM	NOAA-10



NORTHERN ICE LIMIT 30 APR 87

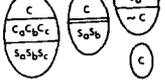
NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

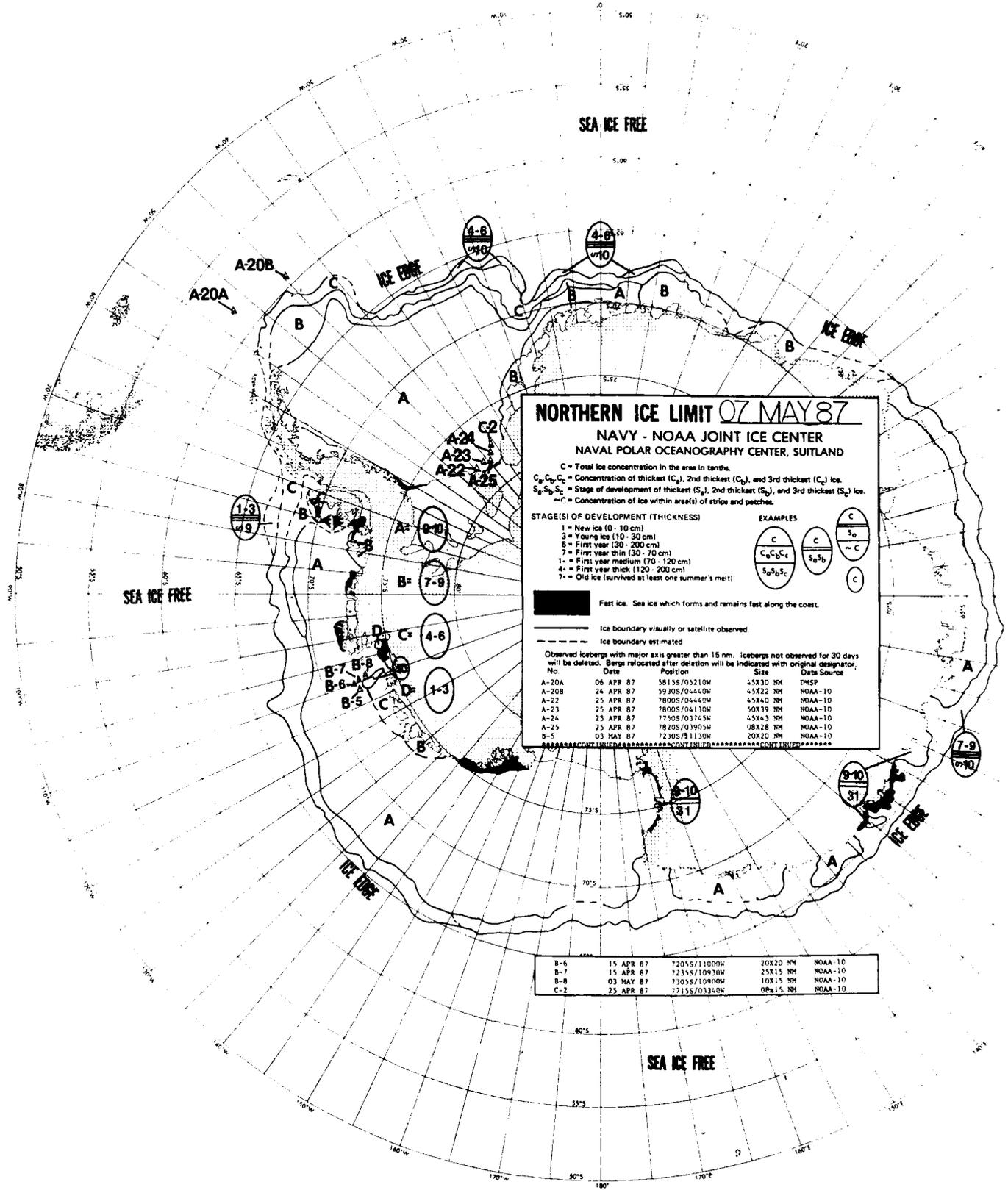


Fast ice. Sea ice which forms and remains fast along the coast.
 - - - - - Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator, Size, and Data Source.

No.	Date	Position	Size	Data Source
A20-A	06 APR 87	5815S/05210W	45X30 NM	DNBP
A20-B	24 APR 87	5930S/04440W	45X22 NM	NOAA-10
A-22	25 APR 87	7800S/04440W	45X40 NM	NOAA-10
A-23	25 APR 87	7800S/04130W	50X39 NM	NOAA-10
A-24	25 APR 87	7750S/03745W	45X43 NM	NOAA-10
A-25	25 APR 87	7820S/03905W	08X28 NM	NOAA-10
B-5	15 APR 87	7230S/11025W	20X20 NM	NOAA-10

B-6	15 APR 87	7205S/11000W	20X20 NM	NOAA-10
B-7	15 APR 87	7235S/10930W	25X15 NM	NOAA-10
B-8	15 APR 87	7305S/10900W	10X15 NM	NOAA-10
C-2	25 APR 87	7715S/03620W	08X15 NM	NOAA-10



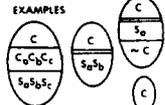
NORTHERN ICE LIMIT 07 MAY 87

**NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND**

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of stripe and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (20 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

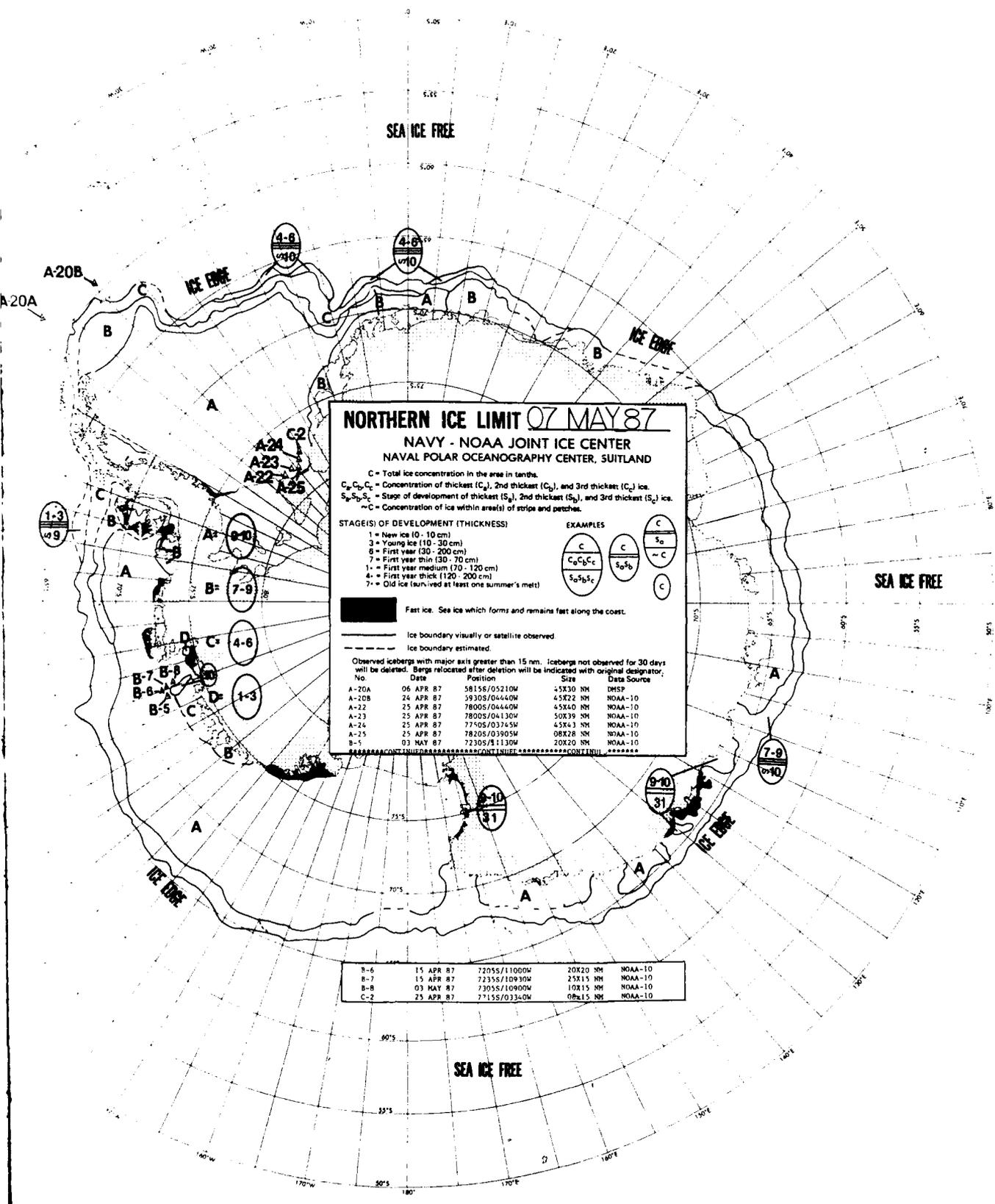


Fast ice: Sea ice which forms and remains fast along the coast.
 --- Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	06 APR 87	5815S/03210W	45X30 NM	IMSF
A-20B	24 APR 87	5930S/0440W	45X22 NM	NOAA-10
A-22	25 APR 87	7800S/0440W	45X40 NM	NOAA-10
A-23	25 APR 87	7800S/04130W	50X39 NM	NOAA-10
A-24	25 APR 87	7750S/03145W	45X43 NM	NOAA-10
A-25	25 APR 87	7820S/03905W	38X28 NM	NOAA-10
B-5	03 MAY 87	7230S/11130W	20X20 NM	NOAA-10

B-6	15 APR 87	7205S/11090W	20X20 NM	NOAA-10
B-7	15 APR 87	7235S/10930W	25X15 NM	NOAA-10
B-8	03 MAY 87	7305S/10900W	10X15 NM	NOAA-10
C-2	25 APR 87	7715S/03340W	08X15 NM	NOAA-10



NORTHERN ICE LIMIT 07 MAY 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within area(s) of stripe and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (10 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$
 $\frac{S_1 S_2 S_3}{S_1 S_2 S_3}$

$\frac{C}{S_1}$
 $\frac{C}{S_2}$
 $\frac{C}{S_3}$

$\frac{C}{C}$
 $\frac{C}{C}$
 $\frac{C}{C}$

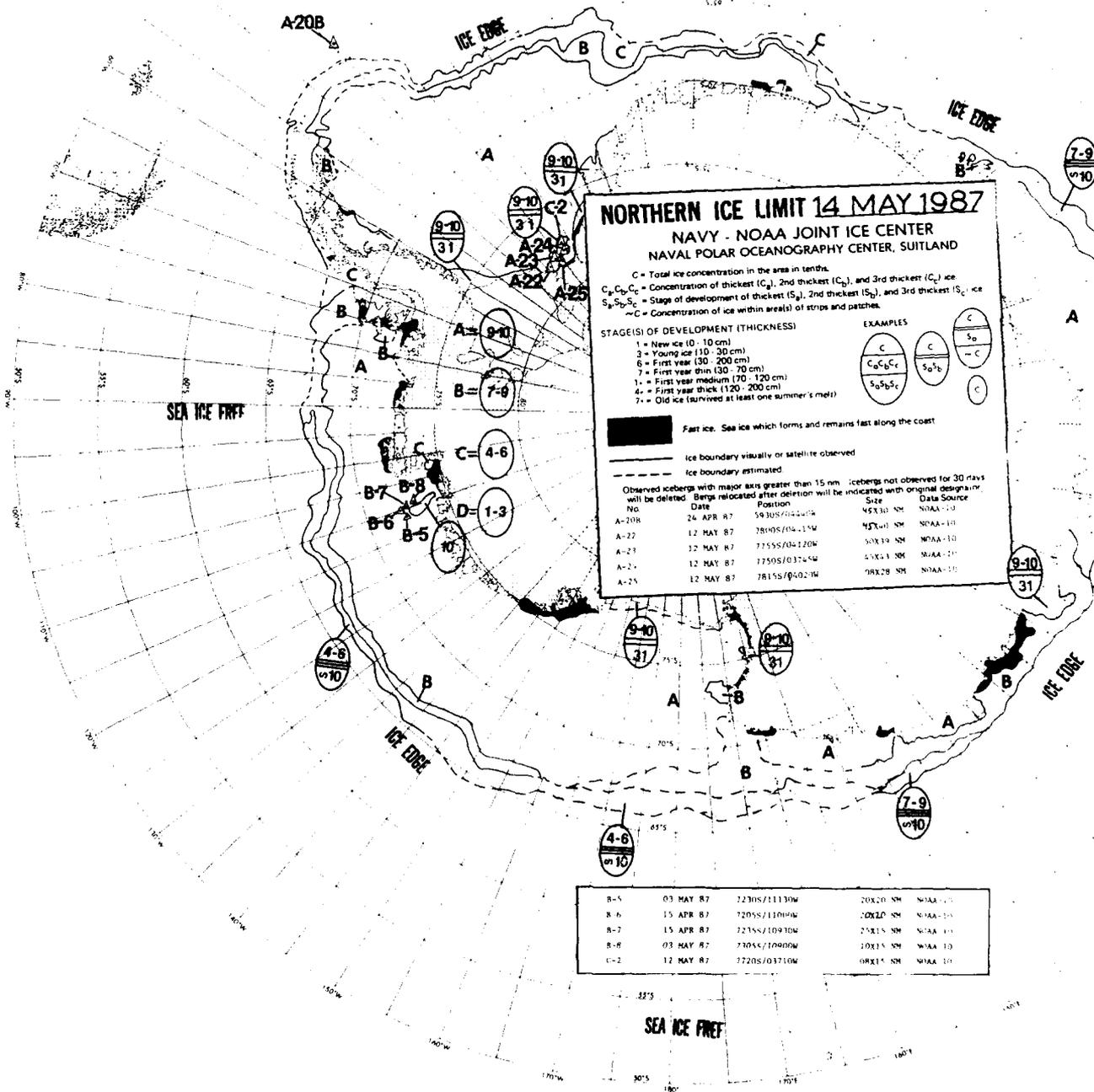
Fast ice: Sea ice which forms and remains fast along the coast.
 --- Ice boundary visually or satellite observed
 - - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	06 APR 87	58158/05210W	45X30 NM	DMSP
A-20B	26 APR 87	59305/04440W	45X22 NM	NOAA-10
A-22	25 APR 87	78005/04440W	45X60 NM	NOAA-10
A-23	25 APR 87	78005/04130W	50X39 NM	NOAA-10
A-24	25 APR 87	77505/03745W	45X43 NM	NOAA-10
A-25	25 APR 87	78205/03905W	08X26 NM	NOAA-10
B-5	03 MAY 87	72305/81130W	20X20 NM	NOAA-10

B-6	15 APR 87	72055/11000W	20X20 NM	NOAA-10
B-7	15 APR 87	72355/10930W	25X15 NM	NOAA-10
B-8	03 MAY 87	73055/10900W	10X15 NM	NOAA-10
C-2	25 APR 87	77155/03340W	08X15 NM	NOAA-10

SEA ICE PREF



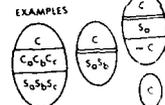
NORTHERN ICE LIMIT 14 MAY 1987

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
-C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)



Fast ice. See ice which forms and remains fast along the coast

Ice boundary visually or satellite observed
Ice boundary estimated

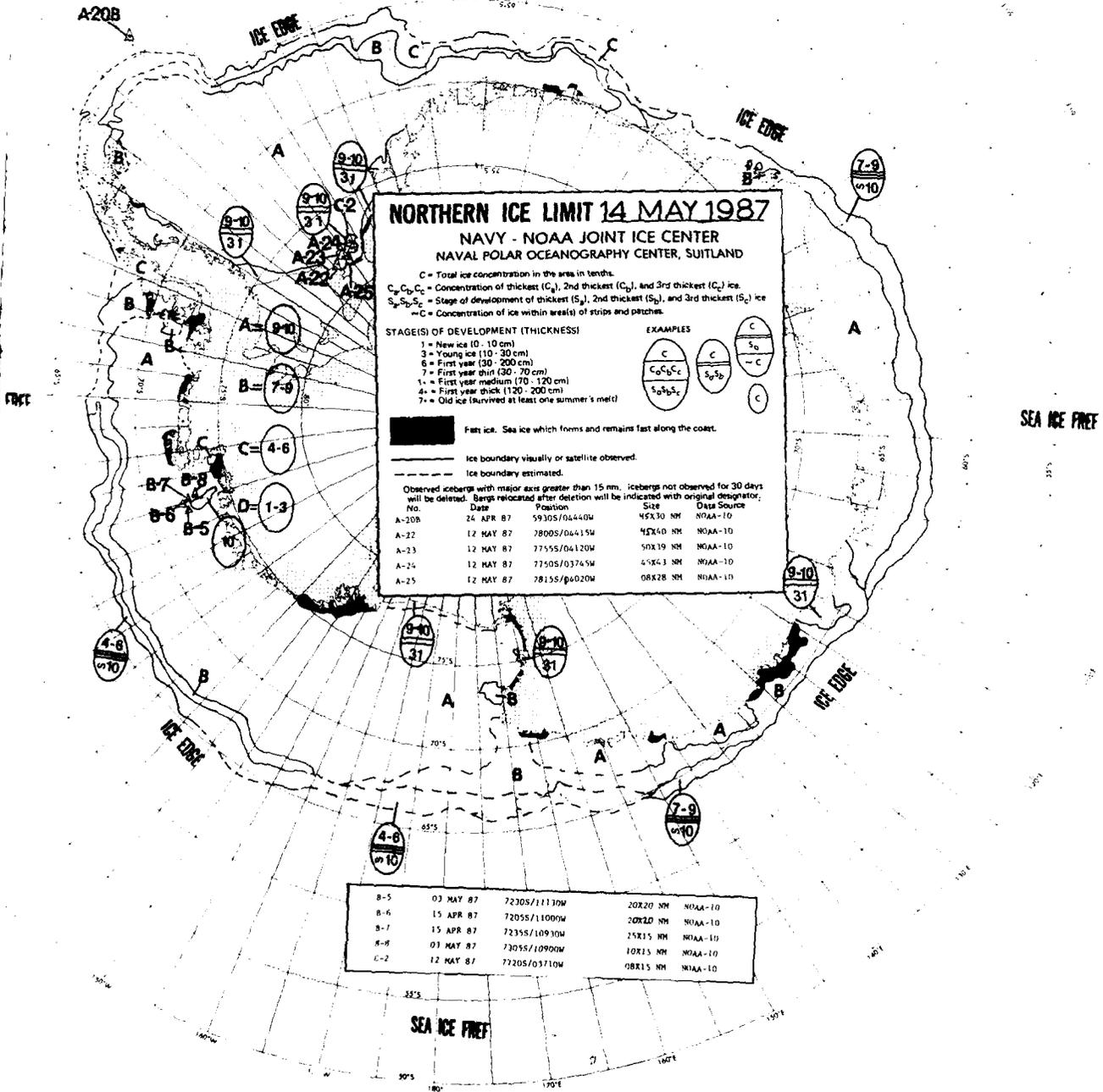
Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

ID	Date	Position	Size	Data Source
A-20R	24 APR 87	59.30S/144.00W	45X10 NM	NOAA-11
A-22	12 MAY 87	78.00S/104.15W	15X10 NM	NOAA-11
A-23	12 MAY 87	77.55S/104.120W	50X19 NM	NOAA-11
A-24	12 MAY 87	77.50S/103.74W	47X11 NM	NOAA-11
A-25	12 MAY 87	78.15S/104.02W	28X28 NM	NOAA-11

B-5	03 MAY 87	72.30S/111.30W	20X20 NM	NOAA-11
B-6	15 APR 87	72.05S/110.00W	20X20 NM	NOAA-11
B-7	15 APR 87	72.35S/109.10W	25X15 NM	NOAA-11
B-8	03 MAY 87	73.05S/109.00W	20X15 NM	NOAA-11
C-2	12 MAY 87	77.20S/107.10W	08X15 NM	NOAA-11

SEA ICE PREF

SEA ICE FREE



NORTHERN ICE LIMIT 14 MAY 1987

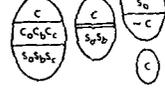
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
T = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (Survived at least one summer's melt)

EXAMPLES



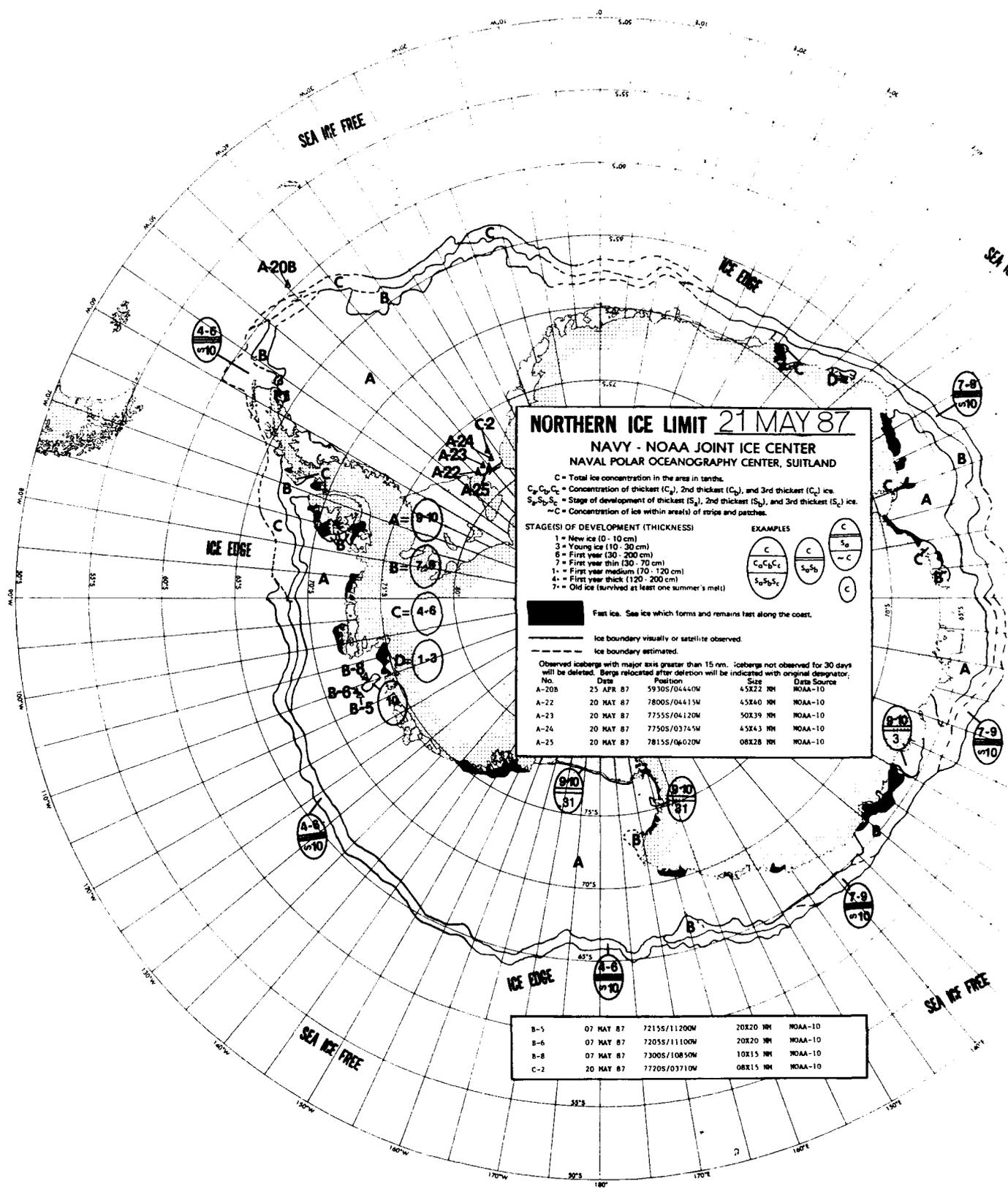
Flat ice. Sea ice which forms and remains fast along the coast.

Ice boundary visually or satellite observed.
Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20B	24 APR 87	5930S/06440W	45X30 NM	NOAA-10
A-22	12 MAY 87	7800S/06415W	41X40 NM	NOAA-10
A-23	12 MAY 87	7755S/06120W	50X19 NM	NOAA-10
A-24	12 MAY 87	7750S/03745W	45X41 NM	NOAA-10
A-25	12 MAY 87	7815S/06020W	08X28 NM	NOAA-10

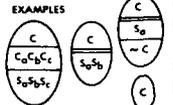
B-5	03 MAY 87	7230S/11130W	20X20 NM	NOAA-10
B-6	15 APR 87	7205S/11000W	20X30 NM	NOAA-10
B-7	15 APR 87	7235S/10930W	25X15 NM	NOAA-10
B-8	01 MAY 87	7305S/10900W	10X15 NM	NOAA-10
C-2	12 MAY 87	7720S/03710W	08X15 NM	NOAA-10



NORTHERN ICE LIMIT 21 MAY 87
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 --C = Concentration of ice within areas of strips and patches.

- STAGE(S) OF DEVELOPMENT (THICKNESS)**
- 1 = New ice (0 - 10 cm)
 - 3 = Young ice (10 - 30 cm)
 - 6 = First year (30 - 200 cm)
 - 7 = First year thin (30 - 70 cm)
 - 1 = First year medium (70 - 120 cm)
 - 4 = First year thick (120 - 200 cm)
 - 7 = Old ice (survived at least one summer's melt)

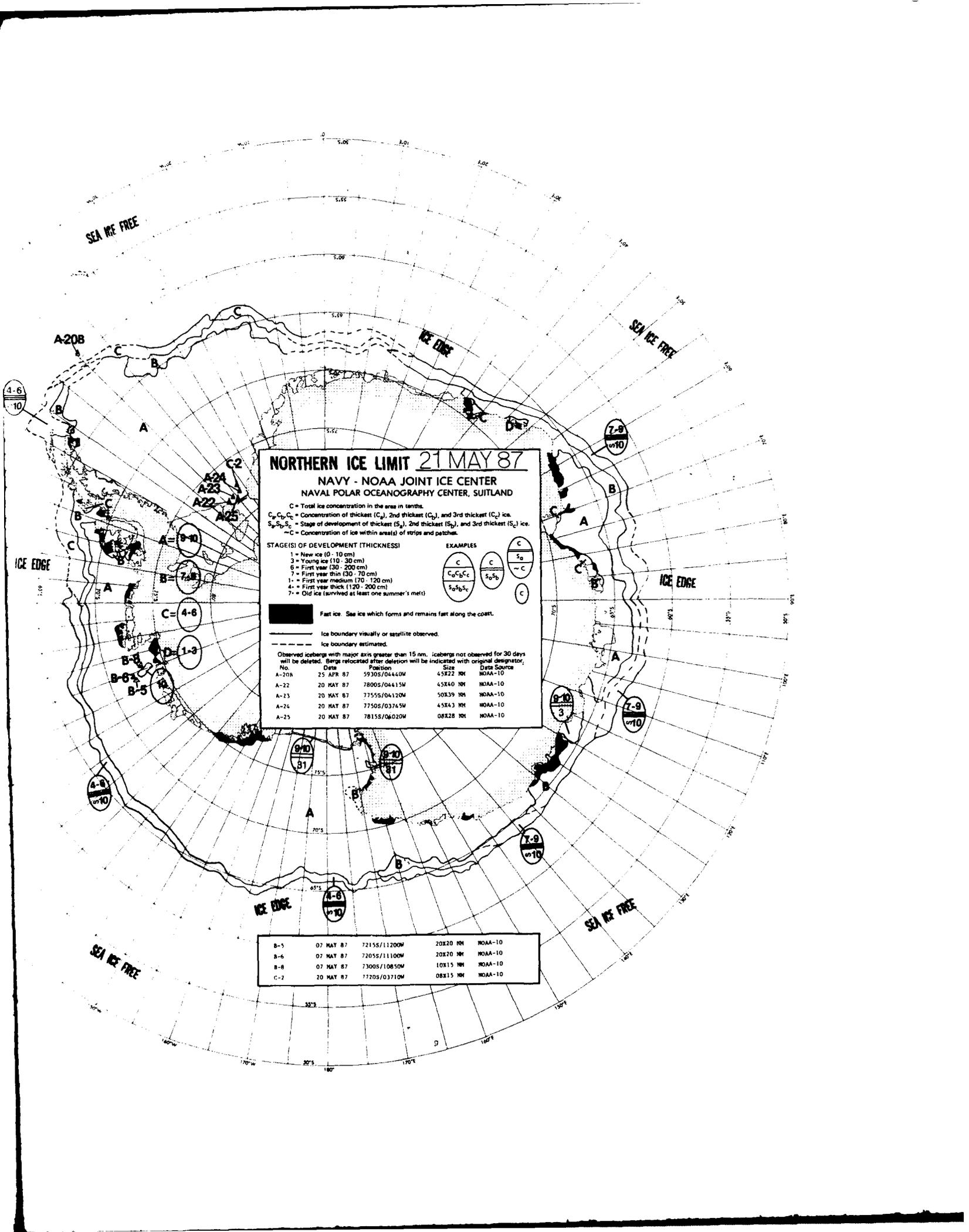


Fast ice. See ice which forms and remains fast along the coast.
 - - - - - Ice boundary visually or satellite observed.
 - - - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20B	25 APR 87	5930S/04440W	45X22 NM	NOAA-10
A-22	20 MAY 87	7800S/04415W	45X40 NM	NOAA-10
A-23	20 MAY 87	7755S/04120W	50X39 NM	NOAA-10
A-24	20 MAY 87	7750S/03745W	45X43 NM	NOAA-10
A-25	20 MAY 87	7815S/06020W	08X28 NM	NOAA-10

B-5	07 MAY 87	7215S/11200W	20X20 NM	NOAA-10
B-6	07 MAY 87	7205S/11100W	20X20 NM	NOAA-10
B-8	07 MAY 87	7300S/10850W	10X15 NM	NOAA-10
C-2	20 MAY 87	7720S/03710W	08X15 NM	NOAA-10



NORTHERN ICE LIMIT 21 MAY 87

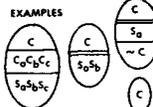
NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



Fast ice: Sea ice which forms and remains fast along the coast.

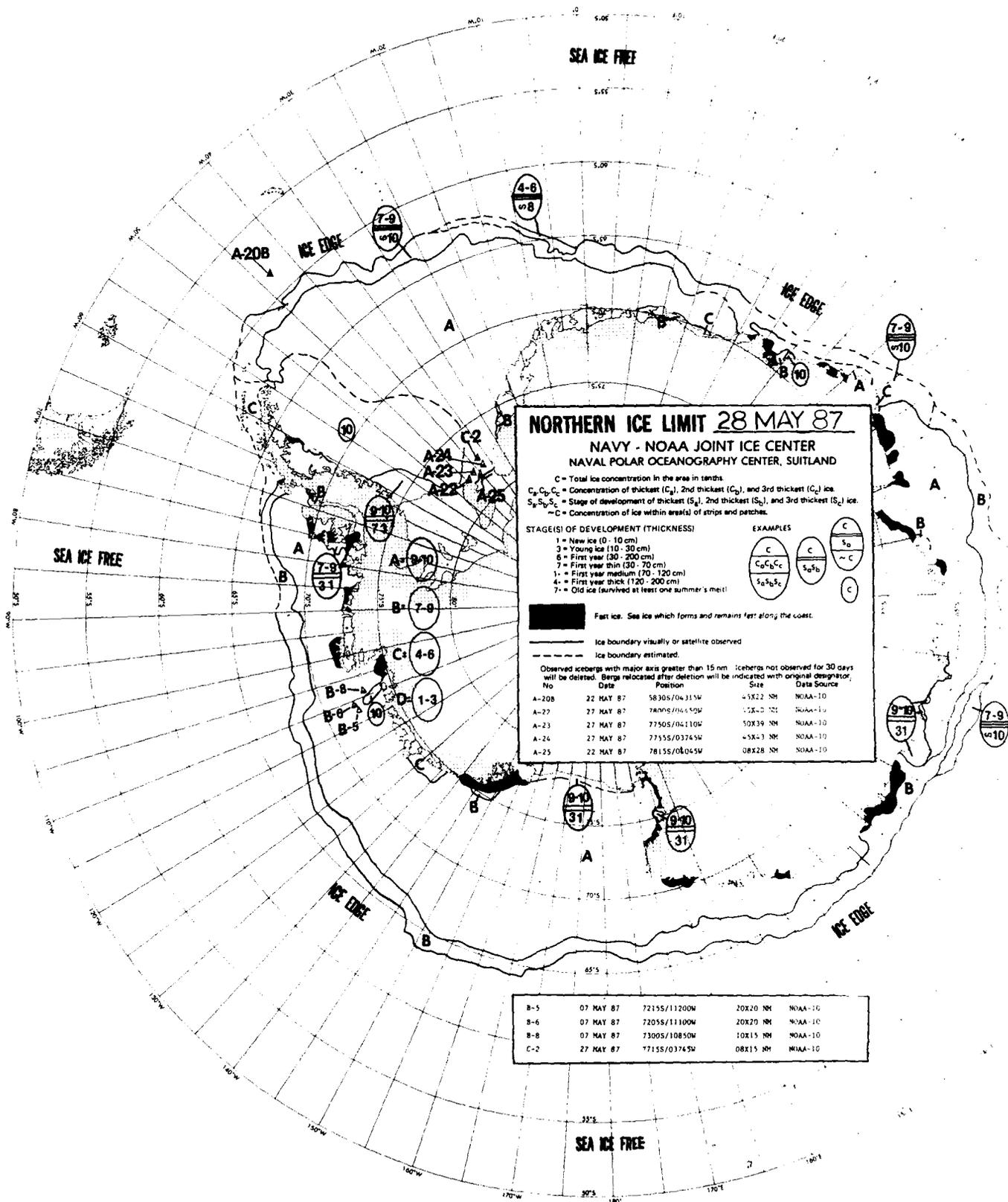
Ice boundary visually or satellite observed.

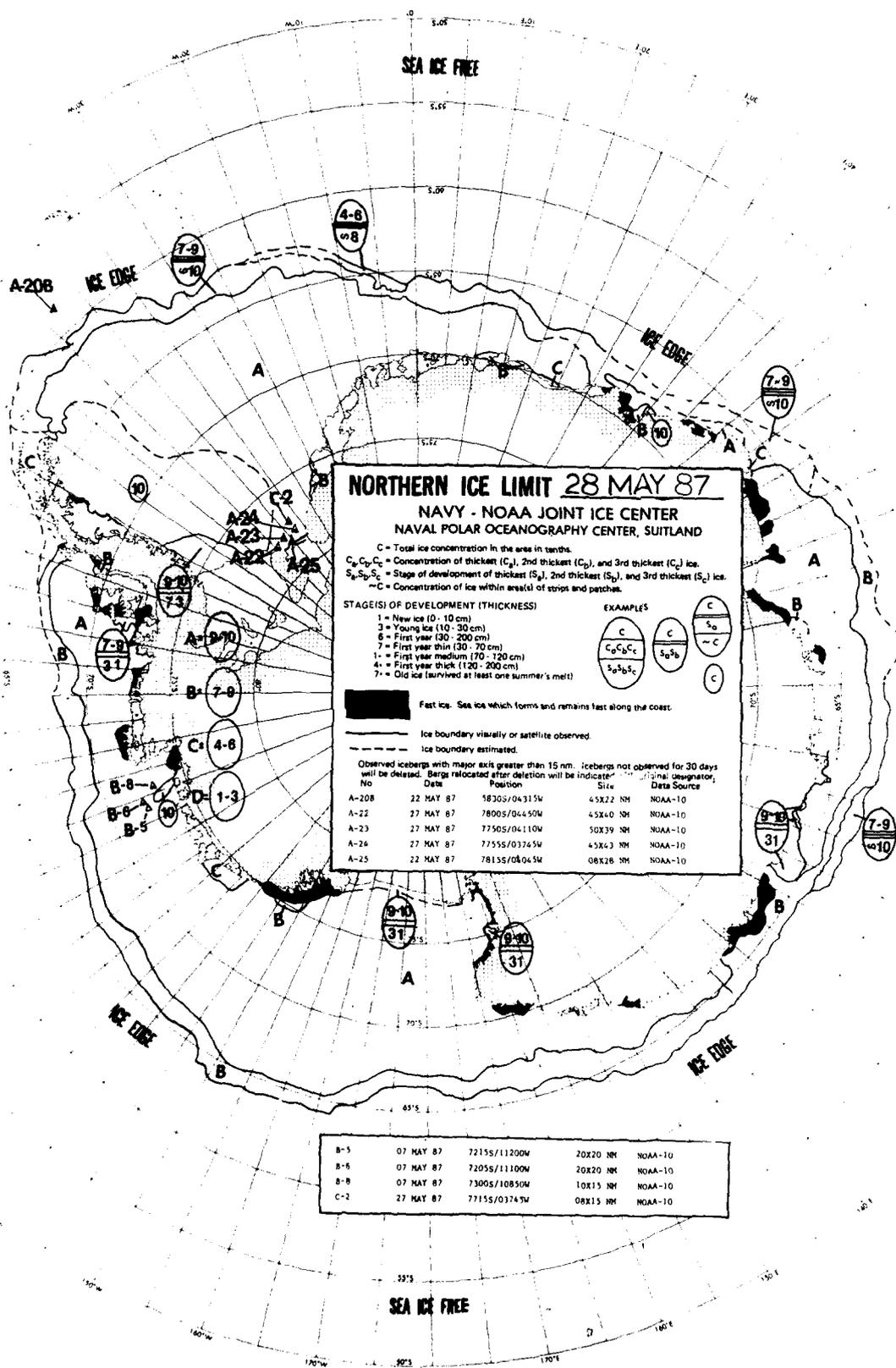
Ice boundary estimated.

Observed icebergs with major axis greater than 15 m. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20B	25 APR 87	5930S/04460W	45X22 NM	NOAA-10
A-22	20 MAY 87	7800S/04415W	45X40 NM	NOAA-10
A-23	20 MAY 87	7755S/04120W	50X39 NM	NOAA-10
A-24	20 MAY 87	7750S/03745W	45X43 NM	NOAA-10
A-25	20 MAY 87	7815S/04020W	08X28 NM	NOAA-10

B-5	07 MAY 87	7215S/11200W	20X20 NM	NOAA-10
B-6	07 MAY 87	7205S/11100W	20X20 NM	NOAA-10
B-8	07 MAY 87	7300S/10850W	10X15 NM	NOAA-10
C-2	20 MAY 87	7720S/03710W	08X15 NM	NOAA-10





NORTHERN ICE LIMIT 28 MAY 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$
 $\frac{S_1 S_2 S_3}{-C}$

$\frac{C}{S_1}$
 $\frac{C}{S_2}$
 $\frac{C}{S_3}$

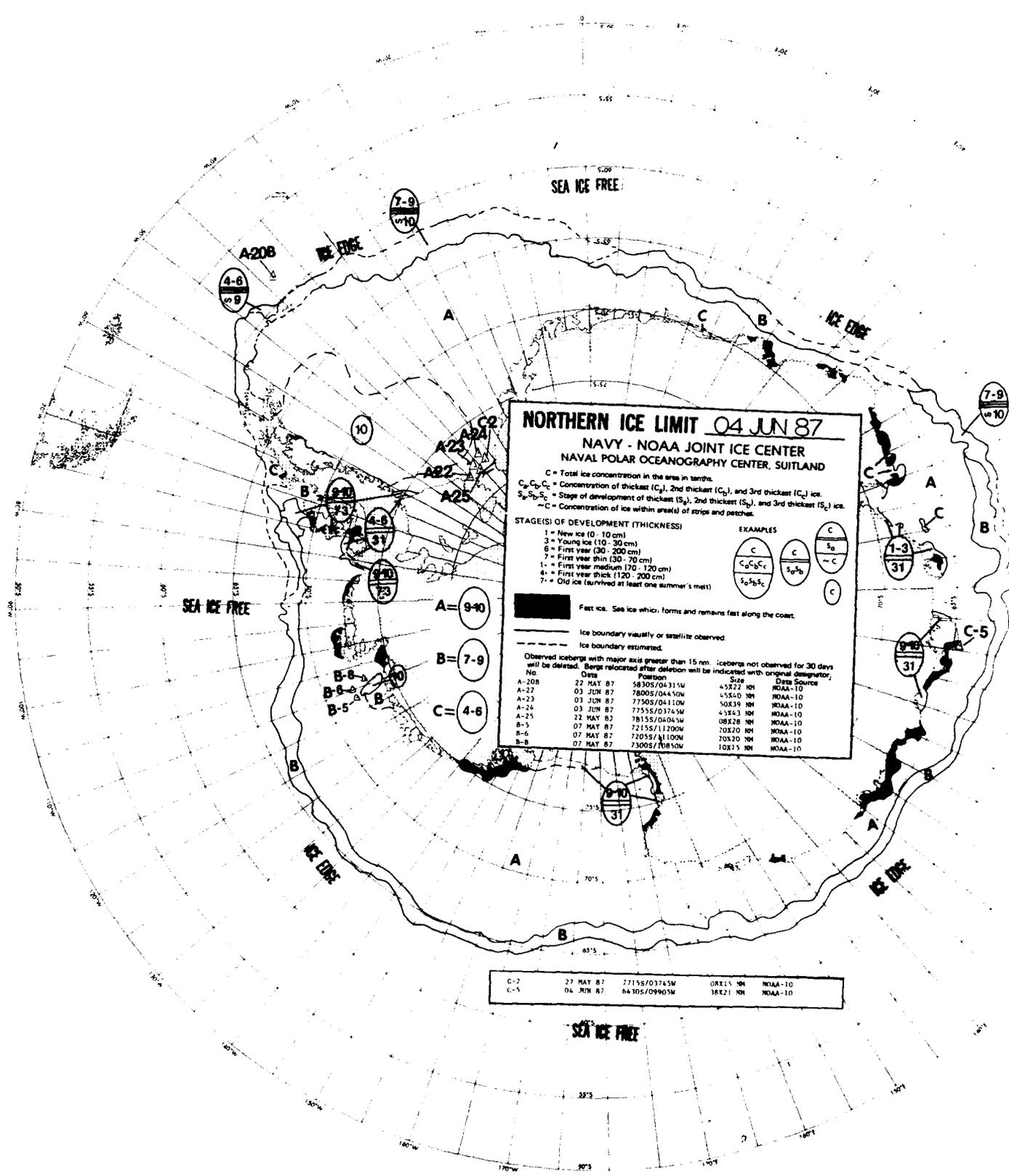
$\frac{C}{-C}$
 $\frac{C}{-C}$
 $\frac{C}{-C}$

Fast ice: Sea ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed.
 Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated.

No.	Date	Position	Size	Original Designator	Data Source
A-208	22 MAY 87	1830S/04315W	45X22 NM	NOAA-10	
A-22	27 MAY 87	7800S/04450W	45X40 NM	NOAA-10	
A-23	27 MAY 87	7750S/04110W	50X39 NM	NOAA-10	
A-24	27 MAY 87	7755S/03745W	45X43 NM	NOAA-10	
A-25	22 MAY 87	7815S/04045W	08X28 NM	NOAA-10	

B-5	07 MAY 87	7215S/11200W	20X20 NM	NOAA-10
B-6	07 MAY 87	7205S/11100W	20X20 NM	NOAA-10
B-8	07 MAY 87	7300S/10850W	10X15 NM	NOAA-10
C-2	27 MAY 87	7715S/03745W	08X15 NM	NOAA-10



NORTHERN ICE LIMIT 04 JUN 87
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year thin (30 - 70 cm)
- 7 = First year medium (70 - 120 cm)
- 1 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

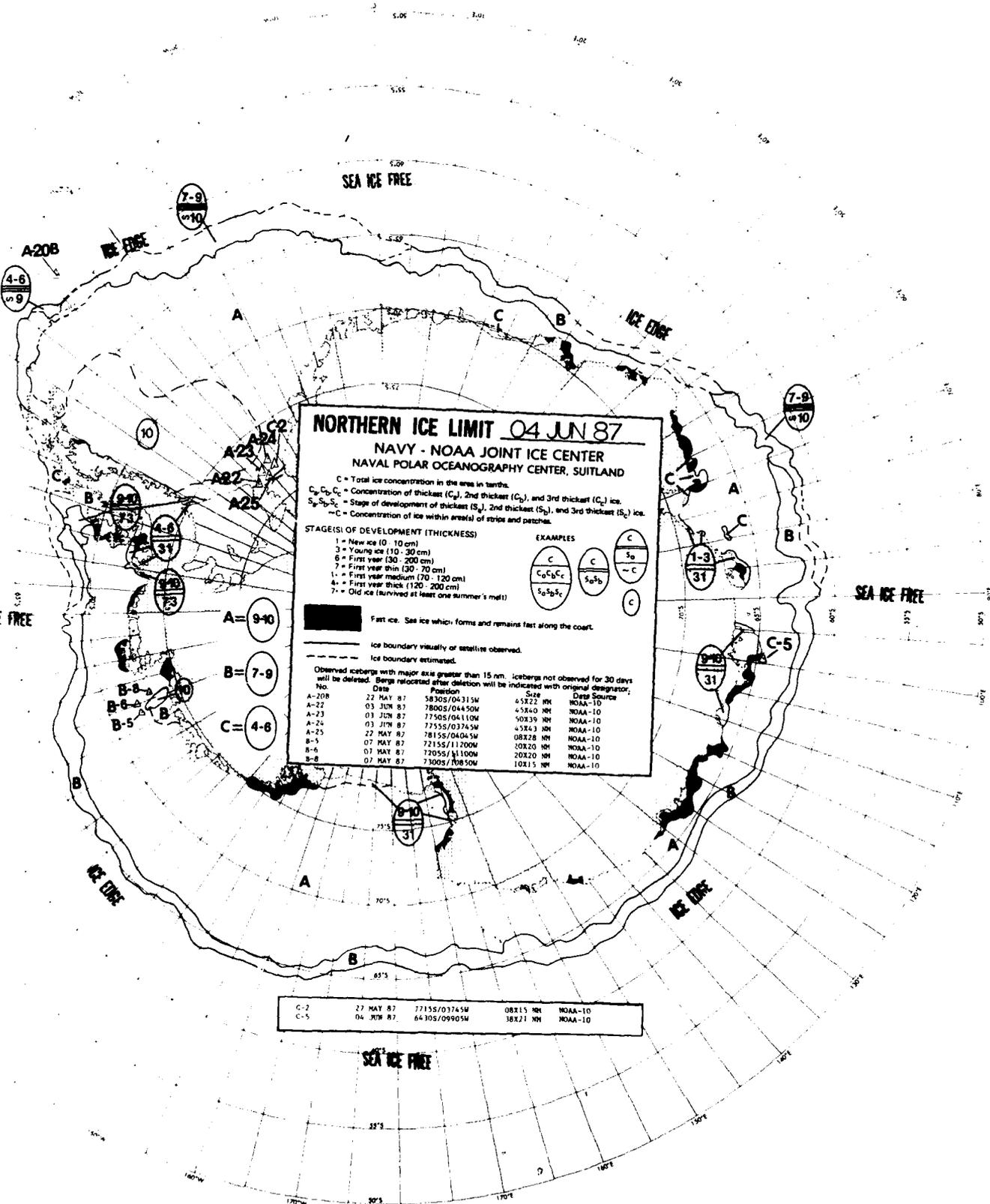
$\frac{C}{C_1 C_2 C_3}$	$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{S_1}$	$\frac{C}{-C}$
$\frac{7-9}{9-10}$	$\frac{31}{23}$	$\frac{31}{31}$	$\frac{31}{31}$

Fast ice. See ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed.
 Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-208	22 MAY 87	5830S/0431W	45X22 NM	NOAA-10
A-22	03 JUN 87	7800S/0445W	45X40 NM	NOAA-10
A-23	03 JUN 87	7750S/0411W	50X39 NM	NOAA-10
A-24	03 JUN 87	7755S/0374W	45X43 NM	NOAA-10
A-25	22 MAY 87	7815S/0404W	08X28 NM	NOAA-10
B-5	07 MAY 87	7215S/1120W	70X20 NM	NOAA-10
B-6	07 MAY 87	7205S/1110W	10X30 NM	NOAA-10
B-8	07 MAY 87	7300S/1085W	10X15 NM	NOAA-10

C-3	27 MAY 87	7715S/0374W	08X15 NM	NOAA-10
C-5	04 JUN 87	6430S/0990W	38X21 NM	NOAA-10



NORTHERN ICE LIMIT 04 JUN 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGES (S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (10 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year thin (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

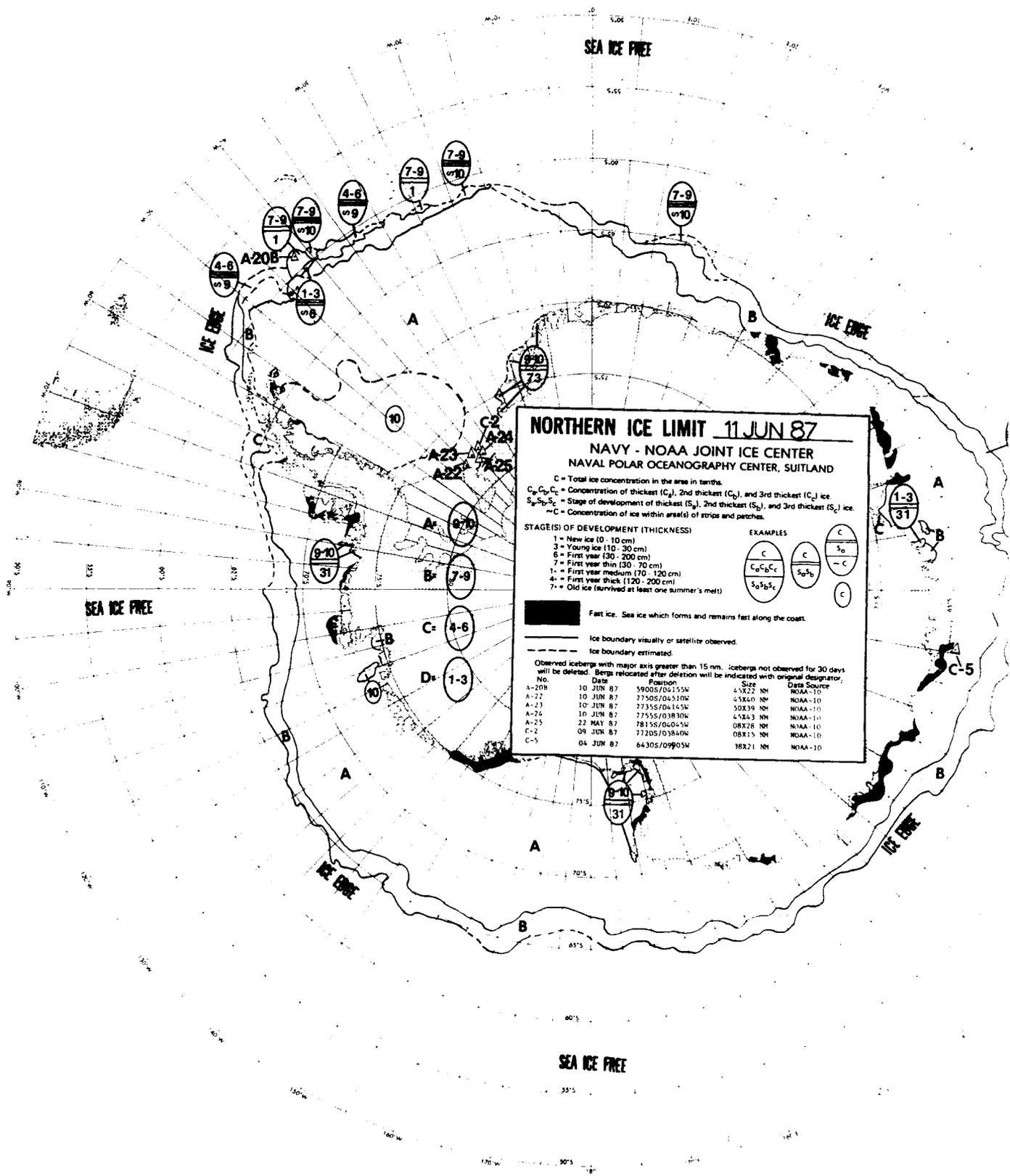
C	C	C
$C_1 C_2 C_3$	$S_1 S_2 S_3$	$\frac{S_1}{-C}$
$S_1 S_2 S_3$	$\frac{S_1 S_2}{-C}$	C

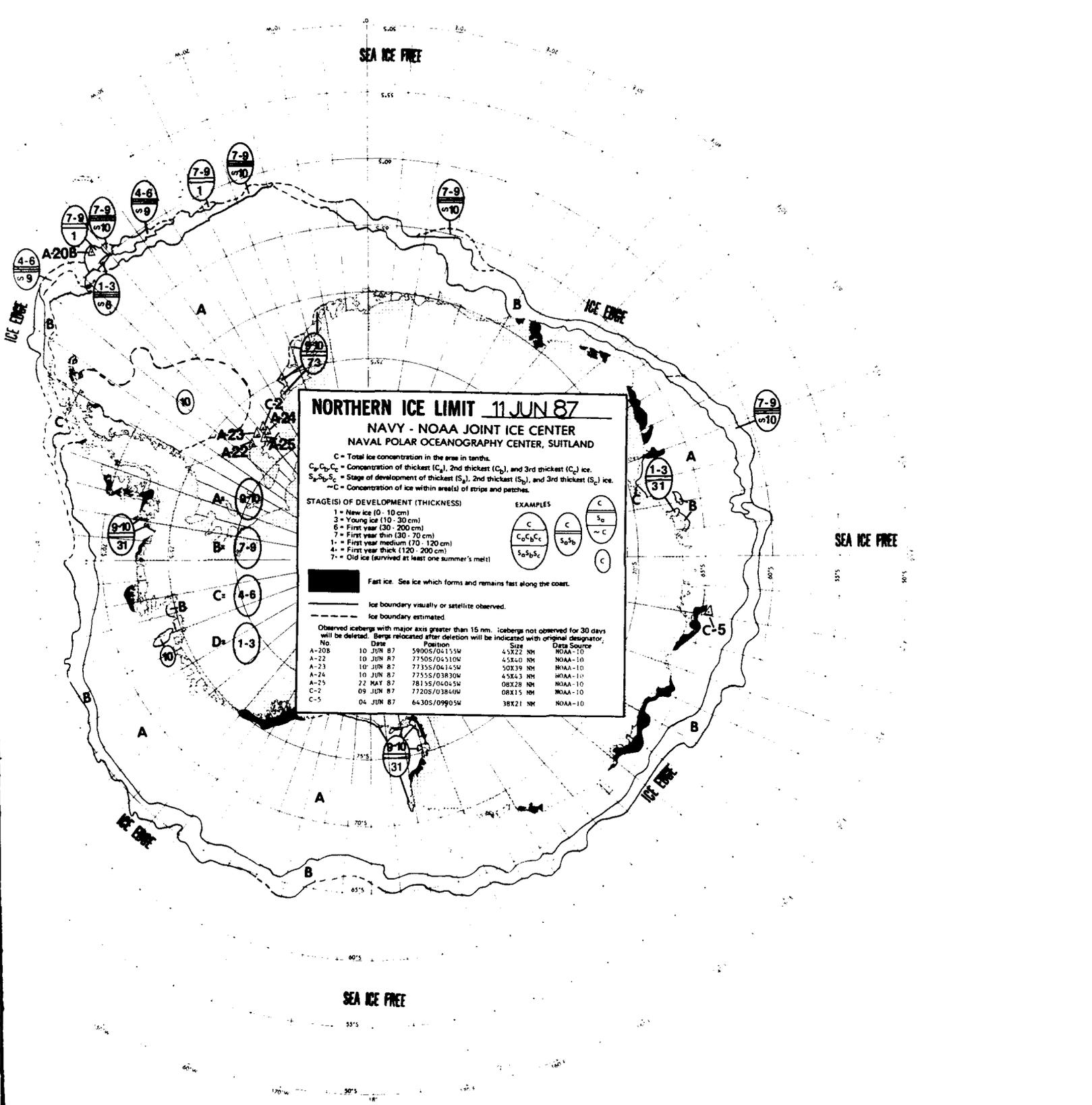
Fast ice. See ice which forms and remains fast along the coast.
 --- Ice boundary visually or satellite observed.
 - - - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20B	22 MAY 87	5830S/04315W	45X22 NM	NOAA-10
A-22	03 JUN 87	7800S/04450W	45X40 NM	NOAA-10
A-23	03 JUN 87	7750S/04110W	50X39 NM	NOAA-10
A-24	03 JUN 87	7755S/03745W	45X43 NM	NOAA-10
A-25	22 MAY 87	7815S/04045W	08X28 NM	NOAA-10
B-5	07 MAY 87	7215S/11200W	20X20 NM	NOAA-10
B-6	07 MAY 87	7205S/11100W	20X20 NM	NOAA-10
B-8	07 MAY 87	7300S/10850W	10X15 NM	NOAA-10

C-2	27 MAY 87	7715S/03745W	08X15 NM	NOAA-10
C-5	04 JUN 87	6430S/05905W	38X21 NM	NOAA-10



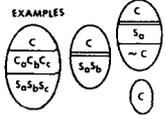


NORTHERN ICE LIMIT 11 JUN 87
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

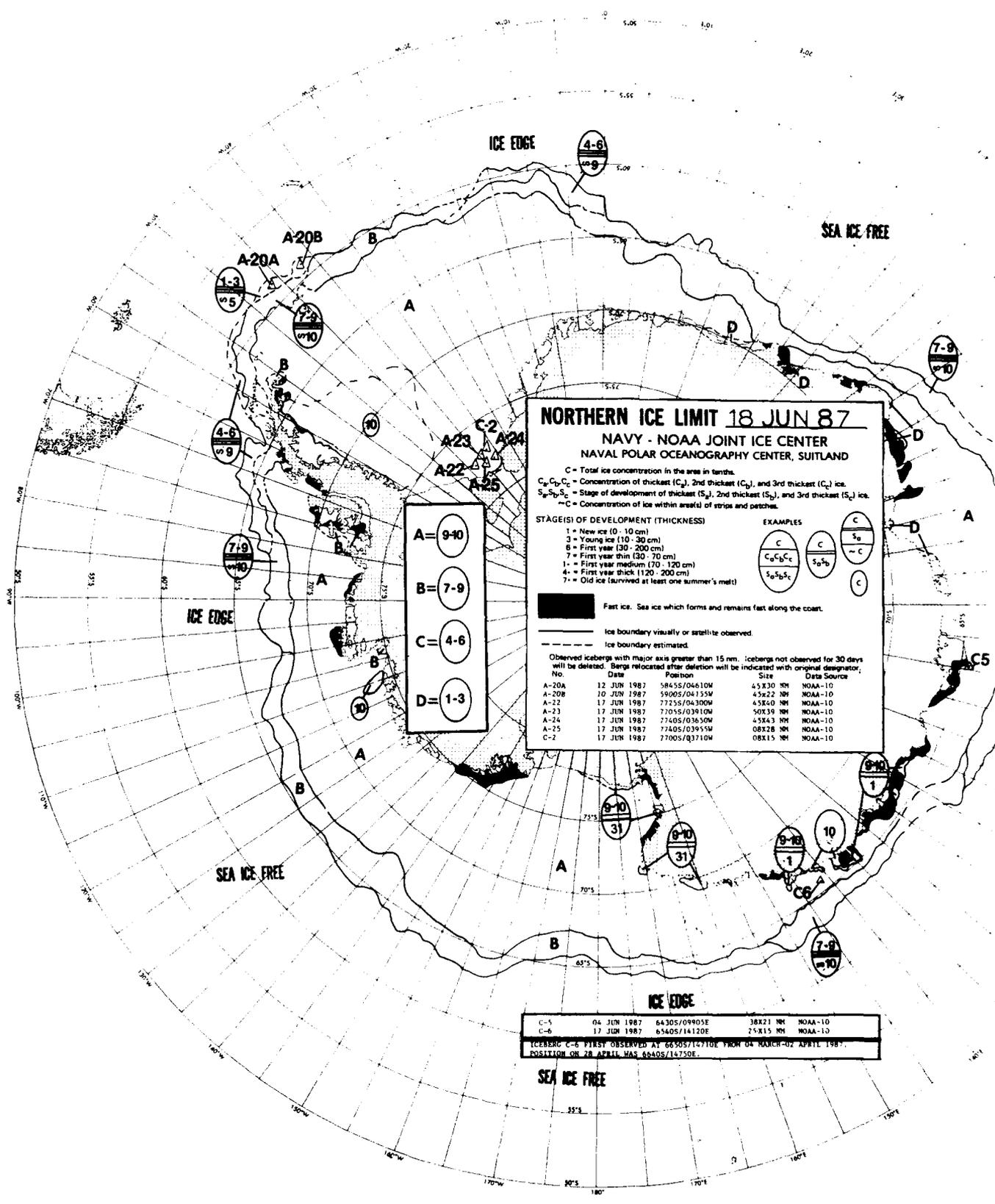
- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)



■ Fast ice. Sea ice which forms and remains fast along the coast.
 — Ice boundary visually or satellite observed.
 - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No	Date	Position	Size	Data Source
A-20B	10 JUN 87	5900S/04155W	45X22 NM	NOAA-10
A-22	10 JUN 87	7750S/04510W	45X40 NM	NOAA-10
A-23	10 JUN 87	7735S/04145W	50X39 NM	NOAA-10
A-24	10 JUN 87	7755S/03830W	45X43 NM	NOAA-10
A-25	22 MAY 87	7815S/06045W	08X28 NM	NOAA-10
C-2	09 JUN 87	7720S/03840W	08X15 NM	NOAA-10
C-5	04 JUN 87	6430S/09905W	38X21 NM	NOAA-10



NORTHERN ICE LIMIT 18 JUN 87
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 $\sim C$ = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 8 = First year medium (70 - 120 cm)
- 9 = First year thick (120 - 200 cm)
- 10 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$ $\frac{C}{S_1 S_2 S_3}$ $\frac{C}{\sim C}$ $\frac{C}{1}$

Fast ice: Sea ice which forms and remains fast along the coast.
 - - - - - Ice boundary visually or satellite observed.
 - - - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	12 JUN 1987	58455/04610M	45X30 NM	NOAA-10
A-20B	10 JUN 1987	59005/04155M	45X22 NM	NOAA-10
A-22	17 JUN 1987	77255/04300W	65X40 NM	NOAA-10
A-23	17 JUN 1987	77015/03910W	50X38 NM	NOAA-10
A-24	17 JUN 1987	77405/03650W	45X43 NM	NOAA-10
A-25	17 JUN 1987	77405/03955W	08X28 NM	NOAA-10
C-2	17 JUN 1987	77005/03710W	08X15 NM	NOAA-10

- A = 9-10
- B = 7-9
- C = 4-6
- D = 1-3

No.	Date	Position	Size	Data Source
C-5	04 JUN 1987	64305/09905E	38X21 NM	NOAA-10
C-6	17 JUN 1987	65405/14120E	25X15 NM	NOAA-10

ICEBERG C-6 FIRST OBSERVED AT 66505/14710E FROM 04 MARCH-02 APRIL 1987.
 POSITION ON 28 APRIL WAS 66405/14750E.

NORTHERN ICE LIMIT 18 JUN 87

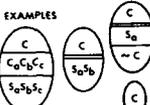
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 $\sim C$ = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



Fast ice. Sea ice which forms and remains fast along the coast.

Ice boundary visually or satellite observed.

Ice boundary estimated.

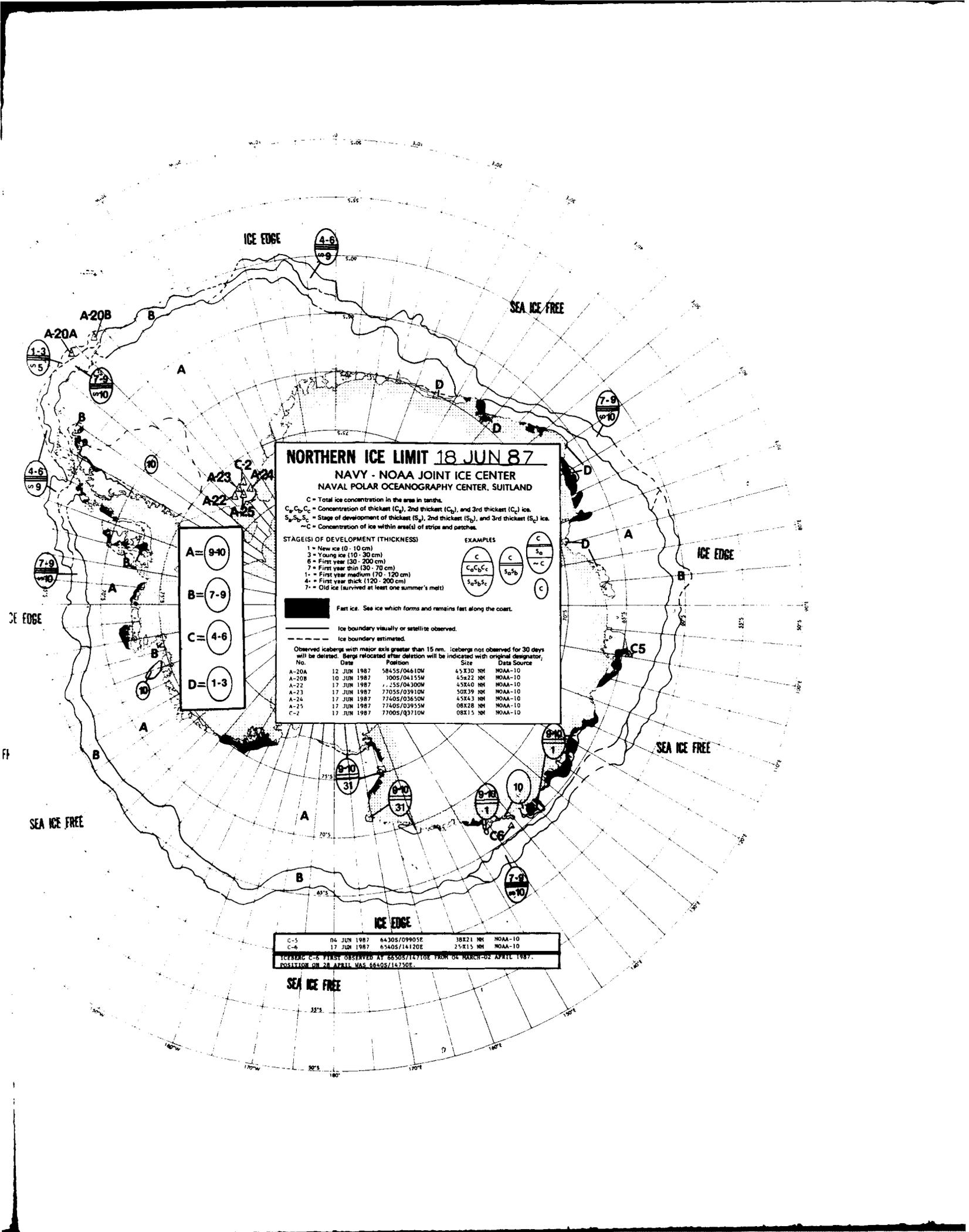
Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

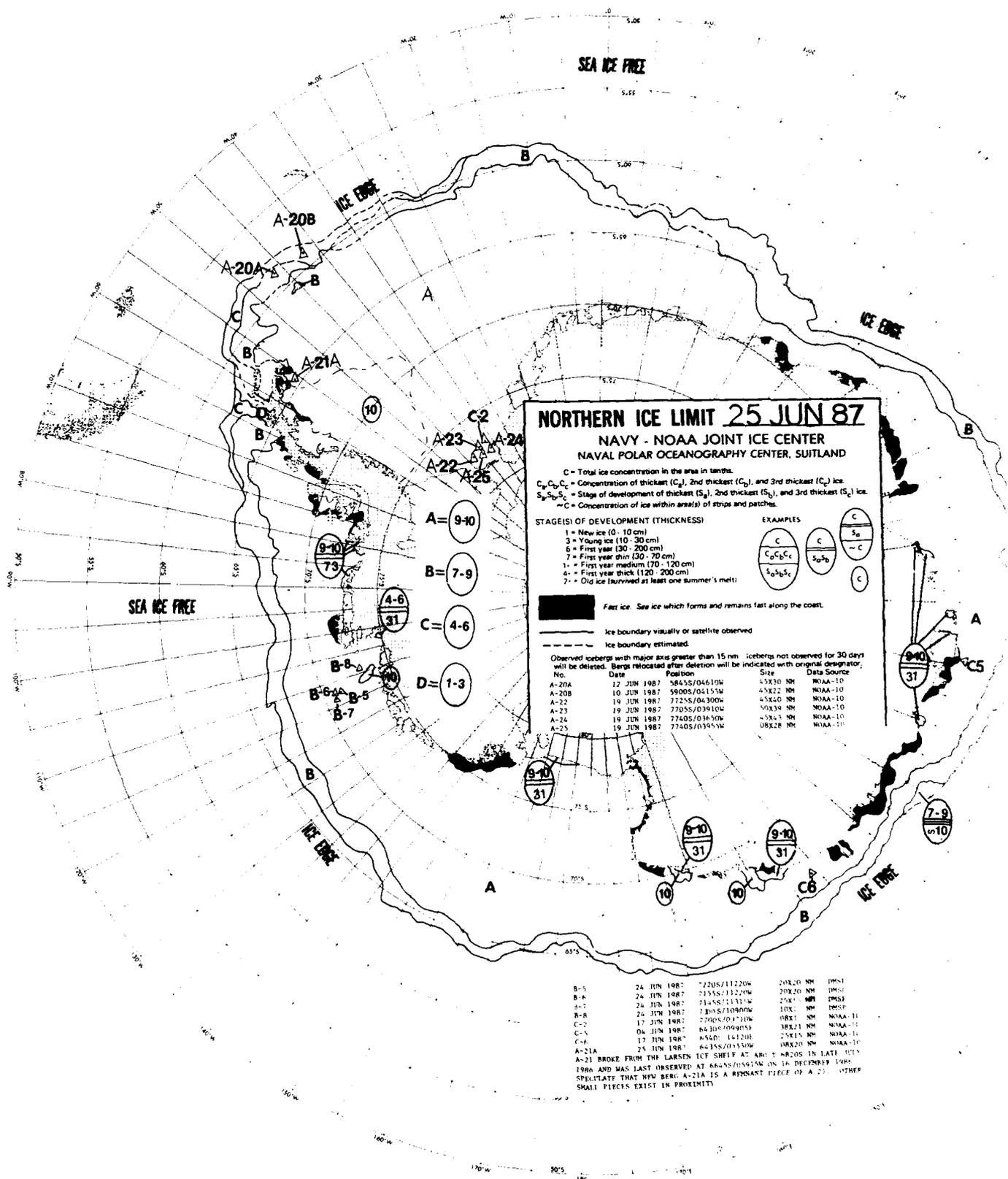
No.	Date	Position	Size	Data Source
A-20A	12 JUN 1987	5845S/04610W	45X30 NM	NOAA-10
A-20B	10 JUN 1987	100S/04155W	45X20 NM	NOAA-10
A-22	17 JUN 1987	7725S/04300W	45X40 NM	NOAA-10
A-23	17 JUN 1987	7705S/03910W	50X39 NM	NOAA-10
A-24	17 JUN 1987	7740S/03650W	45X43 NM	NOAA-10
A-25	17 JUN 1987	7740S/03955W	08X28 NM	NOAA-10
C-2	17 JUN 1987	7700S/03710W	08X15 NM	NOAA-10

A = 9-10
 B = 7-9
 C = 4-6
 D = 1-3

C-5	04 JUN 1987	6430S/0990E	38X21 NM	NOAA-10
C-6	17 JUN 1987	6340S/16120E	25X15 NM	NOAA-10

ICEBERG C-6 FIRST OBSERVED AT 6650S/14710E FROM 04 MARCH-02 APRIL 1987.
 POSITION ON 28 APRIL WAS 6640S/16730E.





NORTHERN ICE LIMIT 25 JUN 87

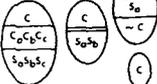
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 - C = Concentration of ice within areas) of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (20 - 70 cm)
- 8 = First year medium (70 - 120 cm)
- 9 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



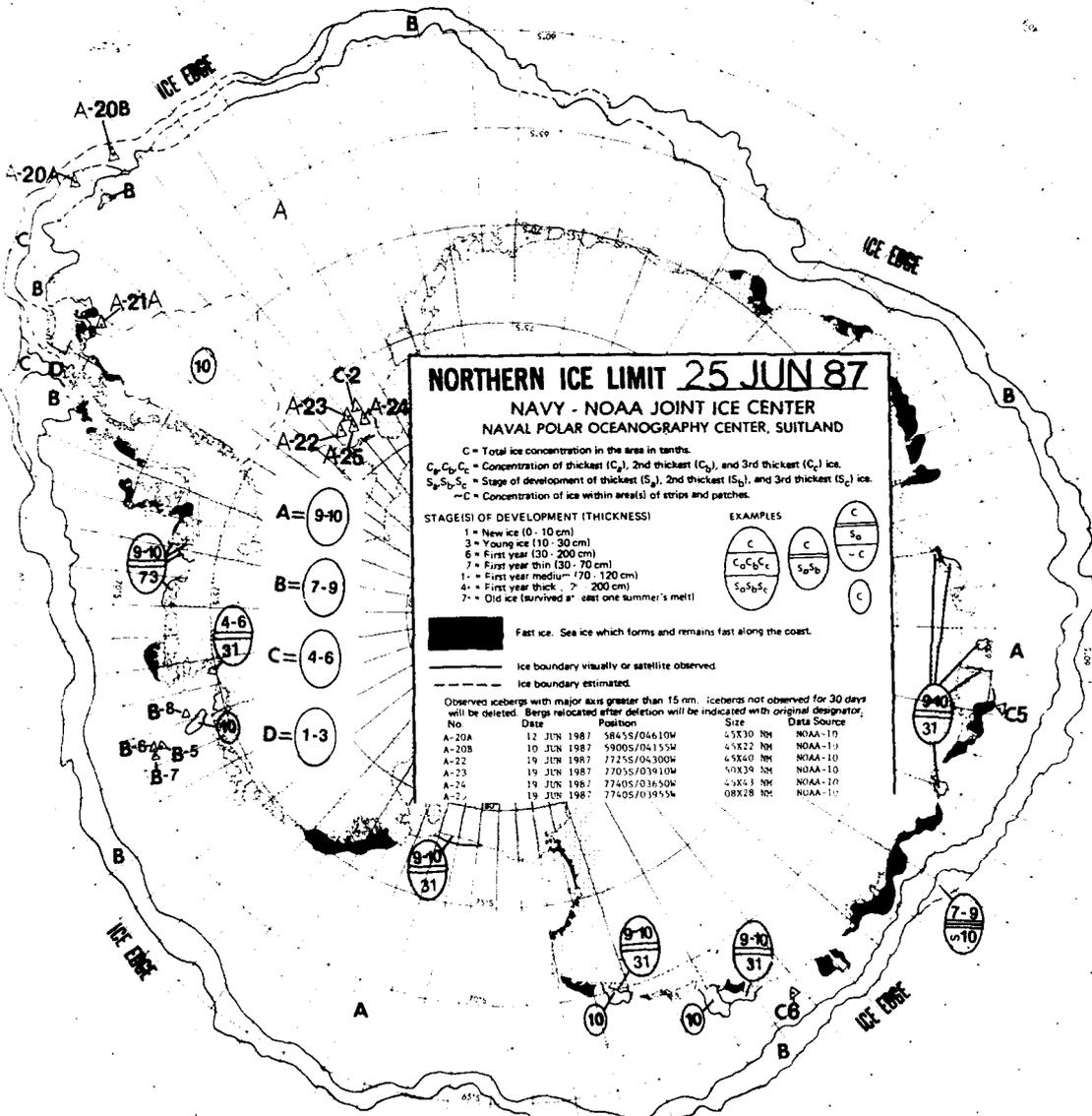
Fast ice: See ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed
 Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	12 JUN 1987	5845S/04610W	45X30 NM	NOAA-10
A-20B	10 JUN 1987	5900S/04155W	45X22 NM	NOAA-10
A-22	19 JUN 1987	7725S/04300W	45X40 NM	NOAA-10
A-23	19 JUN 1987	7705S/03910W	50X30 NM	NOAA-10
A-24	19 JUN 1987	7740S/03450W	45X43 NM	NOAA-10
A-25	19 JUN 1987	7740S/03955W	08X28 NM	NOAA-10

B-5 24 JUN 1987 7205S/11220W 20X20 NM DMSP
 B-6 24 JUN 1987 7155S/11220W 20X20 NM DMSP
 B-7 24 JUN 1987 7145S/11315W 20X17 NM DMSP
 B-8 24 JUN 1987 7105S/10900W 10X10 NM DMSP
 C-2 17 JUN 1987 7705S/04730W 08X11 NM NOAA-11
 C-5 04 JUN 1987 6430S/09905E 38X21 NM NOAA-11
 C-6 17 JUN 1987 6540S/14120E 25X15 NM NOAA-11
 C-6 17 JUN 1987 6540S/14120E 08X20 NM NOAA-10
 A-21A 25 JUN 1987 6435S/09905E 38X21 NM NOAA-11
 A-21 BROKE FROM THE LARSEN ICE SHELF AT 40°E 140°05S IN LATE JULY 1986 AND WAS LAST OBSERVED AT 66°55S/059°10W ON 16 DECEMBER 1986. SPECULATE THAT NEW BERG A-21A IS A REMNANT PIECE OF A 21. OTHER SMALL PIECES EXIST IN PROXIMITY.

SEA ICE FREE



NORTHERN ICE LIMIT 25 JUN 87

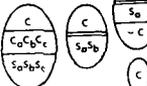
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (10 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year thin (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (> 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



Fast ice. Sea ice which forms and remains fast along the coast.

Ice boundary visually or satellite observed
 Ice boundary estimated

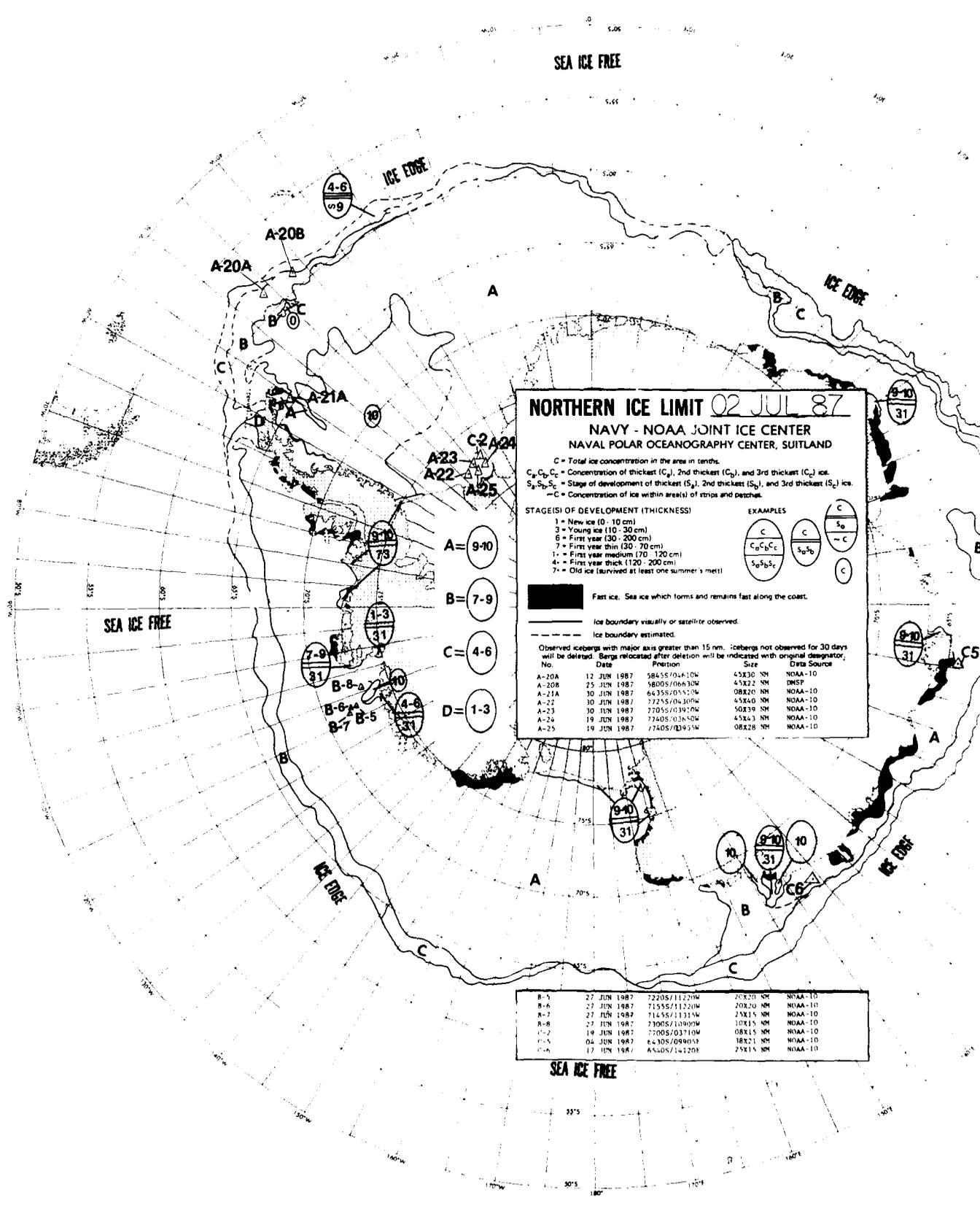
Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	12 JUN 1987	5845S/04610W	25X30 NM	NOAA-10
A-20B	10 JUN 1987	5900S/04155W	45X22 NM	NOAA-10
A-22	19 JUN 1987	7725S/04300W	65X40 NM	NOAA-10
A-23	19 JUN 1987	7705S/03910W	50X39 NM	NOAA-10
A-24	19 JUN 1987	7740S/03650W	45X30 NM	NOAA-10
A-25	19 JUN 1987	7740S/03955W	08X28 NM	NOAA-10

SEA ICE FREE

B-5	24 JUN 1987	7220S/11220W	20X20 NM	DMSP
B-6	24 JUN 1987	7155S/11270W	20X20 NM	DMSP
B-7	24 JUN 1987	7145S/11315W	25X15 NM	DMSP
B-8	24 JUN 1987	7105S/110900W	10X15 NM	DMSP
C-2	17 JUN 1987	7705S/03710W	08X15 NM	NOAA-10
C-3	04 JUN 1987	6630S/05965E	18X21 NM	NOAA-10
C-4	17 JUN 1987	6540S/11120E	25X15 NM	NOAA-10
A-21A	25 JUN 1987	6635S/05550W	08X20 NM	NOAA-10

A-21 BROKE FROM THE LARSEN ICE SHELF AT ABOUT 0620S IN LATE JULY 1986 AND WAS LAST OBSERVED AT 6655S/0551W ON 16 DECEMBER 1986. SPECULATE THAT NEW BERG A-21A IS A DISJUNCT PIECE OF A-21. OTHER SMALL PIECES EXIST IN PROXIMITY.



SEA ICE FREE

SEA ICE FREE

SEA ICE FREE

NORTHERN ICE LIMIT 02 JUL 87

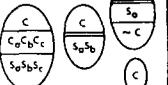
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year (30 - 200 cm)
- 4 = First year thin (30 - 70 cm)
- 5 = First year medium (70 - 120 cm)
- 6 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

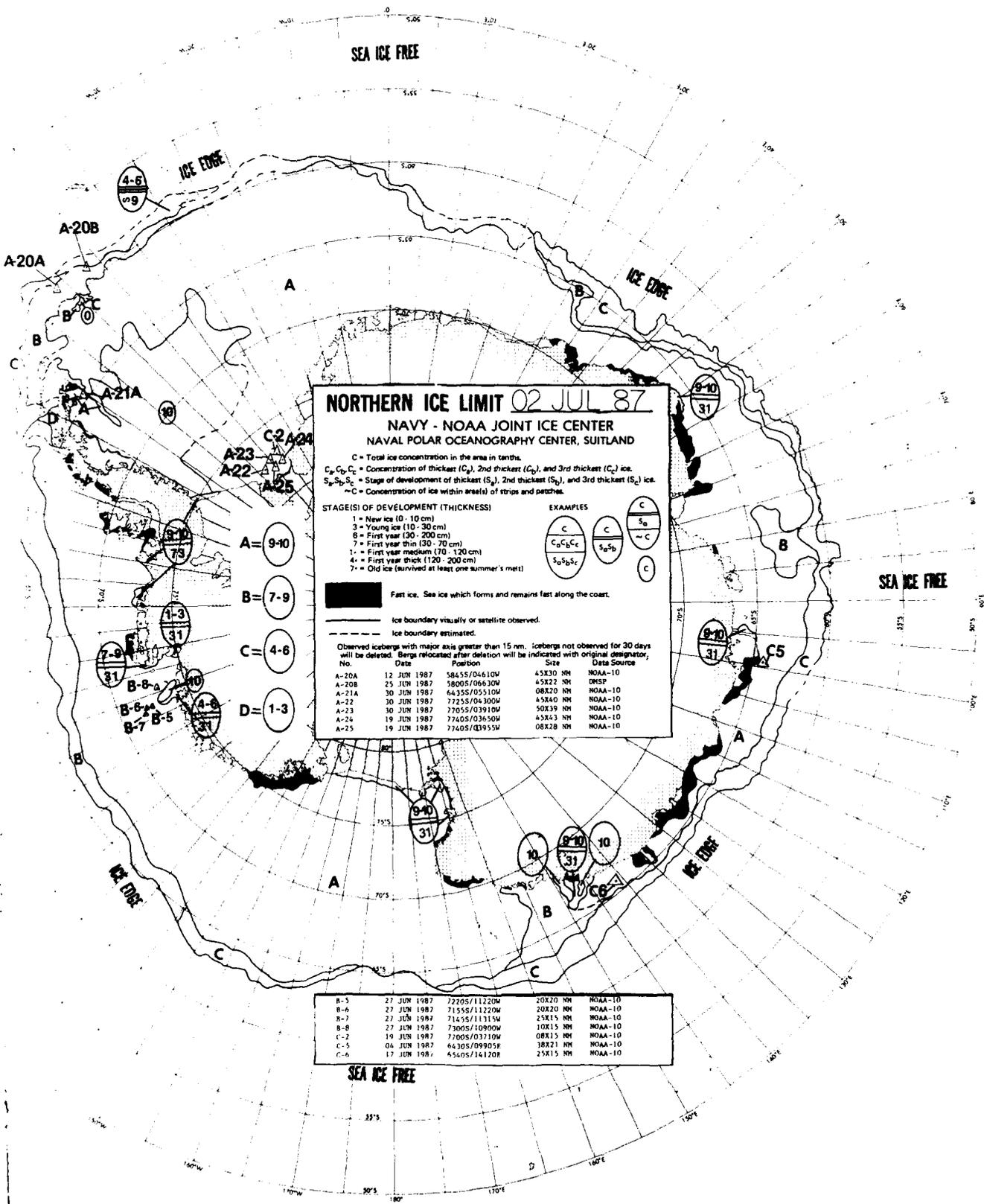


- A = 9-10**
- B = 7-9**
- C = 4-6**
- D = 1-3**

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Crsta Source
A-20A	12 JUN 1987	5845S/04610W	45X30 NM	NOAA-10
A-20B	25 JUN 1987	5800S/06630W	47X22 NM	DMSP
A-21A	30 JUN 1987	6435S/05510W	08X20 NM	NOAA-10
A-22	30 JUN 1987	7225S/0430W	45X40 NM	NOAA-10
A-23	30 JUN 1987	7705S/03970W	50X39 NM	NOAA-10
A-24	19 JUN 1987	7740S/03640W	43X43 NM	NOAA-10
A-25	19 JUN 1987	7740S/0395W	08X28 NM	NOAA-10

B-5	27 JUN 1987	7220S/1125W	20X20 NM	NOAA-10
B-6	27 JUN 1987	7155S/1125W	20X20 NM	NOAA-10
B-7	27 JUN 1987	7145S/1131W	25X15 NM	NOAA-10
B-8	27 JUN 1987	7300S/1090W	10X15 NM	NOAA-10
C-2	19 JUN 1987	7700S/03110W	08X15 NM	NOAA-10
C-5	04 JUN 1987	6430S/0900W	18X21 NM	NOAA-10
C-6	17 JUN 1987	6440S/14120E	25X15 NM	NOAA-10



NORTHERN ICE LIMIT 02 JUL 87

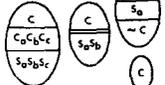
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 $\sim C$ = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 8 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

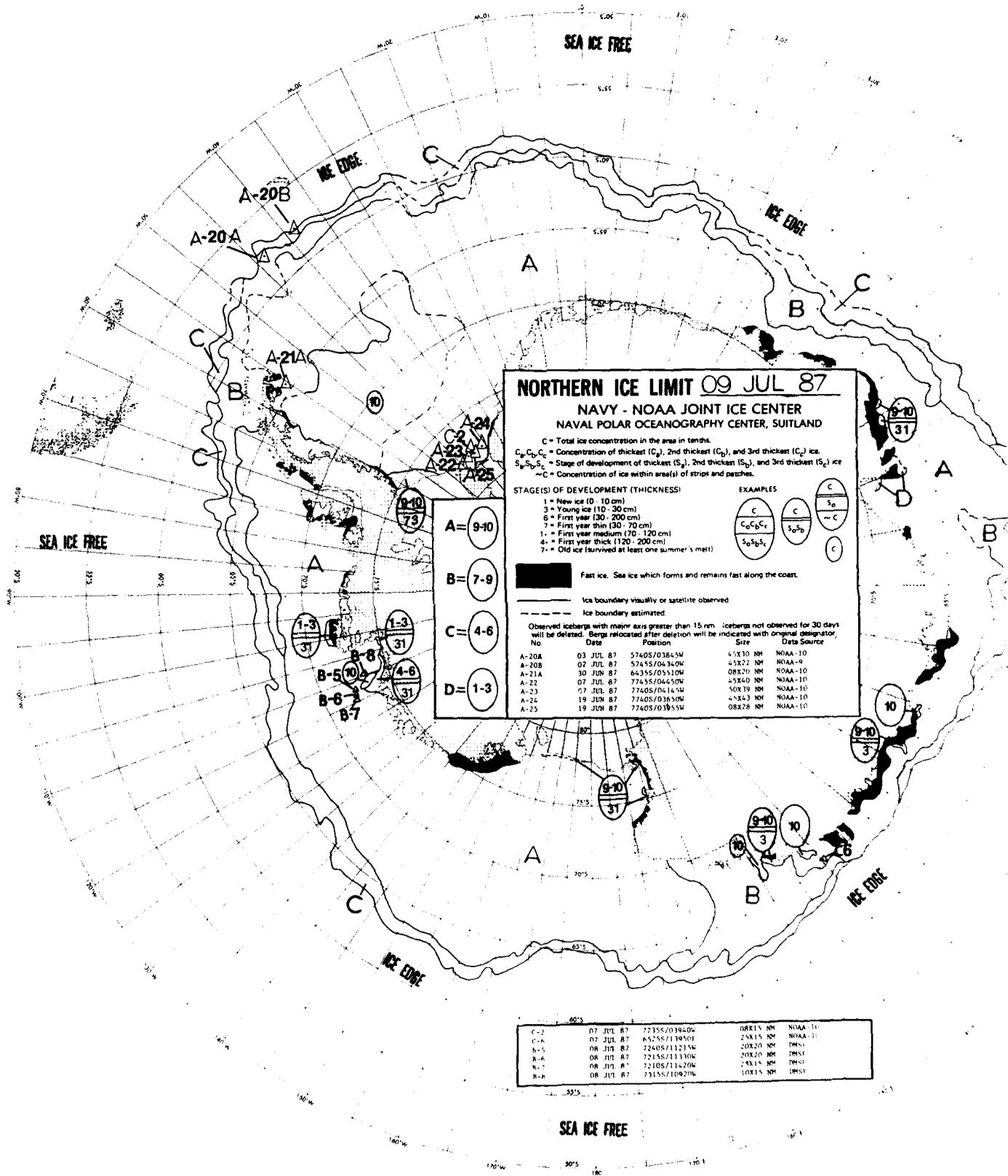


Fast ice. Sea ice which forms and remains fast along the coast.
 --- Ice boundary visually or satellite observed.
 - - - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	12 JUN 1987	58455/04610W	45X30 NM	NOAA-10
A-20B	25 JUN 1987	58005/06630W	45X22 NM	DMSP
A-21A	30 JUN 1987	64355/05310W	08X20 NM	NOAA-10
A-22	30 JUN 1987	72255/04300W	45X40 NM	NOAA-10
A-23	30 JUN 1987	77055/03910W	50X39 NM	NOAA-10
A-24	19 JUN 1987	77405/03650W	45X43 NM	NOAA-10
A-25	19 JUN 1987	77405/03955W	08X28 NM	NOAA-10

B-5	27 JUN 1987	72905/11220W	20X20 NM	NOAA-10
B-6	27 JUN 1987	71555/11220W	20X20 NM	NOAA-10
B-7	27 JUN 1987	71455/11315W	25X15 NM	NOAA-10
B-8	27 JUN 1987	73005/10900W	10X15 NM	NOAA-10
C-2	19 JUN 1987	72005/03210W	08X15 NM	NOAA-10
C-5	04 JUN 1987	64305/09905E	38X21 NM	NOAA-10
C-6	17 JUN 1987	65405/14120E	25X15 NM	NOAA-10



NORTHERN ICE LIMIT 09 JUL 87

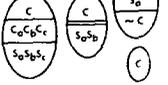
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 $\sim C$ = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



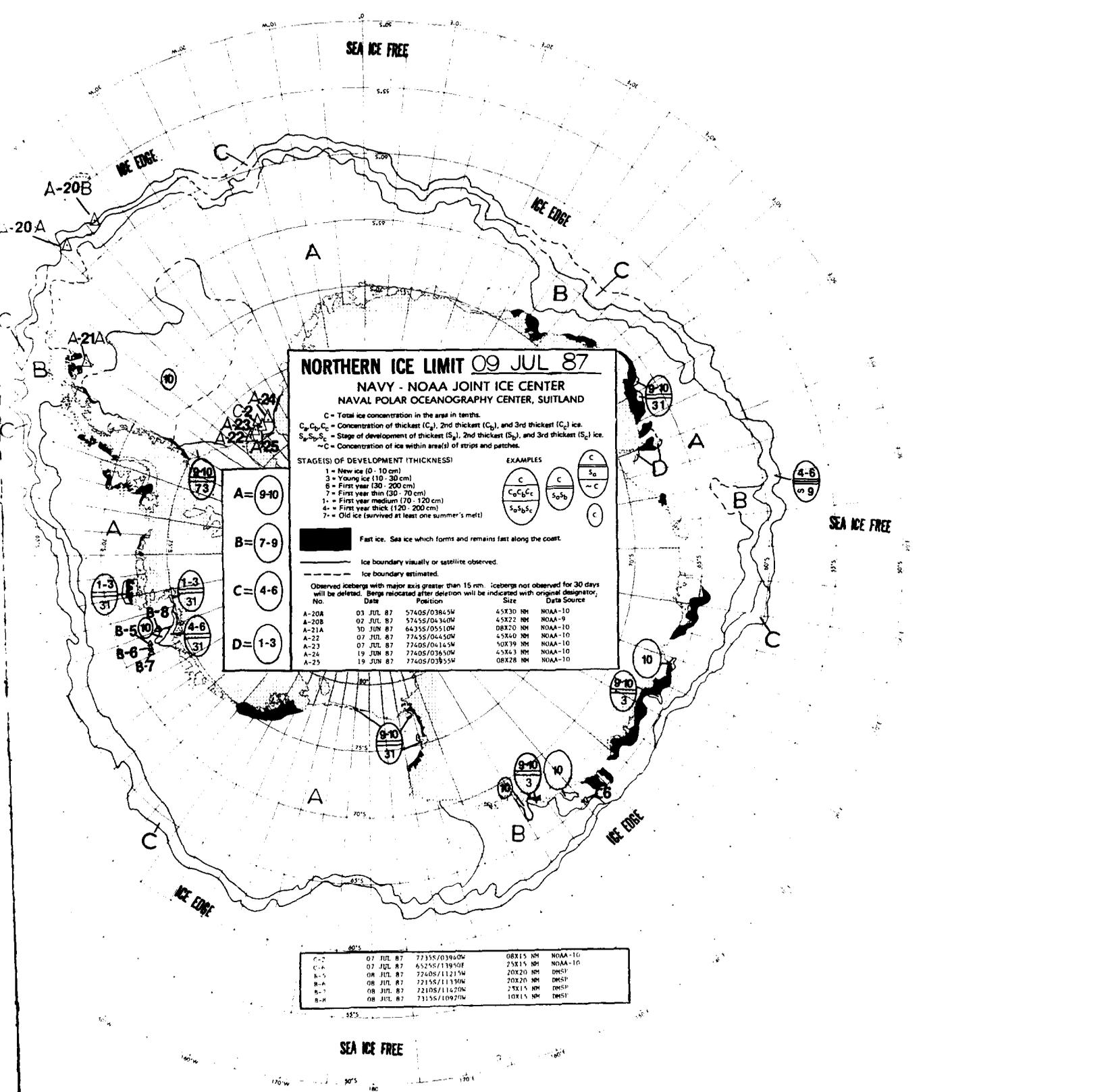
- A = 9-10
- B = 7-9
- C = 4-6
- D = 1-3

Fast ice. Sea ice which forms and remains fast along the coast.
 — Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	03 JUL 87	5740S/03845W	45X30 NM	NOAA-10
A-20B	02 JUL 87	5745S/04140W	45X22 NM	NOAA-9
A-21A	30 JUN 87	6435S/05510W	08X20 NM	NOAA-10
A-22	07 JUL 87	7745S/04650W	45X40 NM	NOAA-10
A-23	07 JUL 87	7740S/04145W	50X39 NM	NOAA-10
A-24	19 JUN 87	7740S/03850W	45X43 NM	NOAA-10
A-25	19 JUN 87	7740S/03855W	08X28 NM	NOAA-10

C-2	07 JUL 87	7235S/03940W	08X15 NM	NOAA-10
C-6	07 JUL 87	6525S/119450E	25X15 NM	NOAA-11
B-5	08 JUL 87	7240S/11215W	20X20 NM	DMSP
B-6	08 JUL 87	7215S/11330W	20X20 NM	DMSP
B-7	08 JUL 87	7210S/11420W	25X15 NM	DMSP
B-8	08 JUL 87	7315S/10920E	10X15 NM	DMSP



NORTHERN ICE LIMIT 09 JUL 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 C = Concentration of ice within area(s) of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$	$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{C}$
$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{C}$	$\frac{C}{C}$

A = 9-10
B = 7-9
C = 4-6
D = 1-3

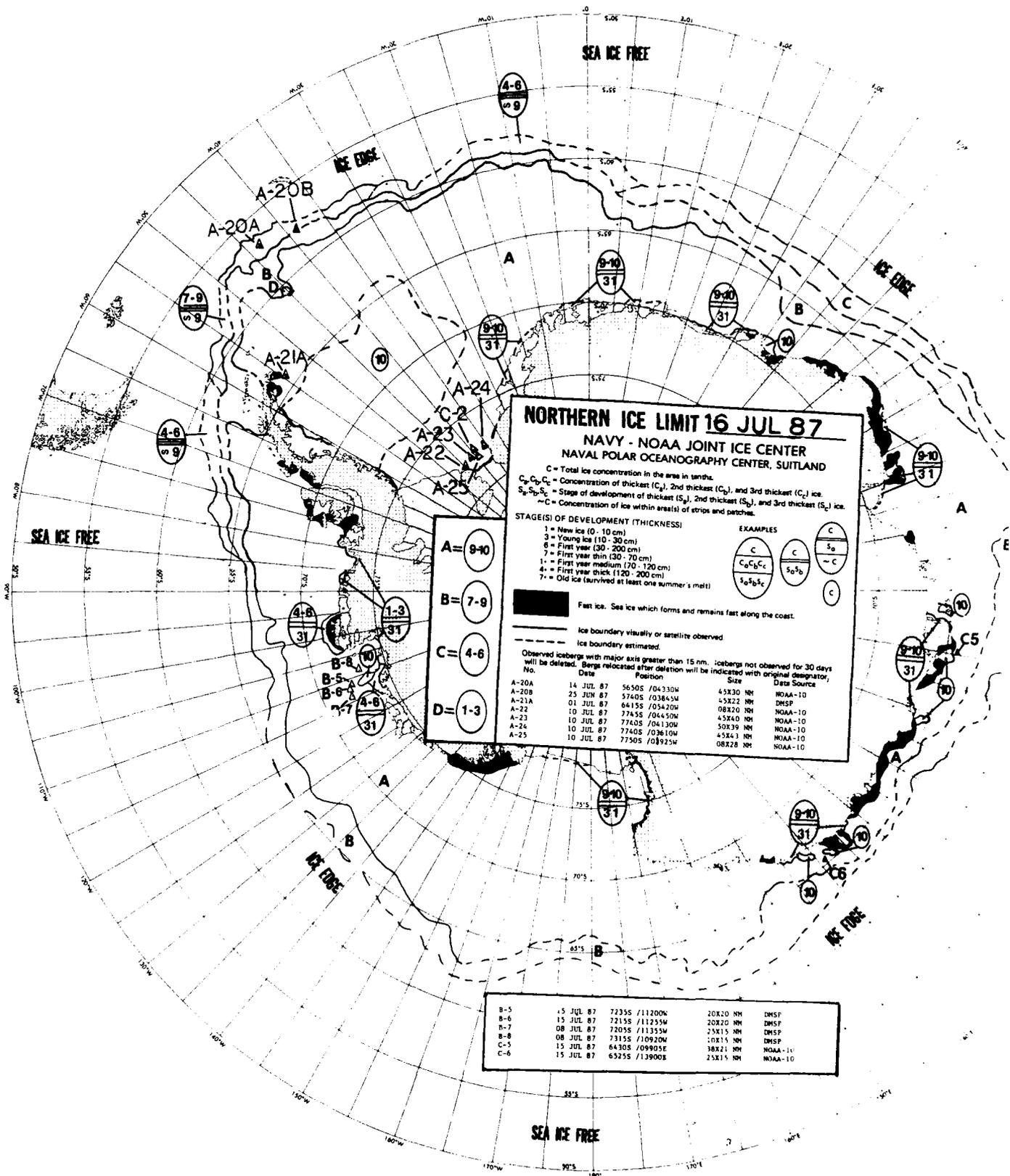
Fast ice. Sea ice which forms and remains fast along the coast.

— Ice boundary visually or satellite observed.
 --- Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after detection will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	03 JUL 87	57405/03845W	45X30 NM	NOAA-10
A-20B	02 JUL 87	57455/04340W	45X22 NM	NOAA-9
A-21A	30 JUN 87	64355/05510W	08X20 NM	NOAA-10
A-22	07 JUL 87	73455/04450W	45X40 NM	NOAA-10
A-23	07 JUL 87	77405/04145W	50X39 NM	NOAA-10
A-24	19 JUN 87	77405/03650W	45X43 NM	NOAA-10
A-25	19 JUN 87	77405/03955W	08X28 NM	NOAA-10

C-2	07 JUL 87	77355/03960W	08X15 NM	NOAA-10
C-4	07 JUL 87	65255/11950E	25X15 NM	NOAA-10
B-5	08 JUL 87	72405/11211W	20X20 NM	DHSP
B-6	08 JUL 87	72155/11151W	20X20 NM	DHSP
B-7	08 JUL 87	72105/11420W	25X15 NM	DHSP
B-8	08 JUL 87	73155/10921W	10X15 NM	DHSP



NORTHERN ICE LIMIT 16 JUL 87
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 C_1, S_1 = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year thin (30 - 70 cm)
- 7 = First year medium (70 - 120 cm)
- 1 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$	$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{- C}$
$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{- C}$	$\frac{C}{- C}$

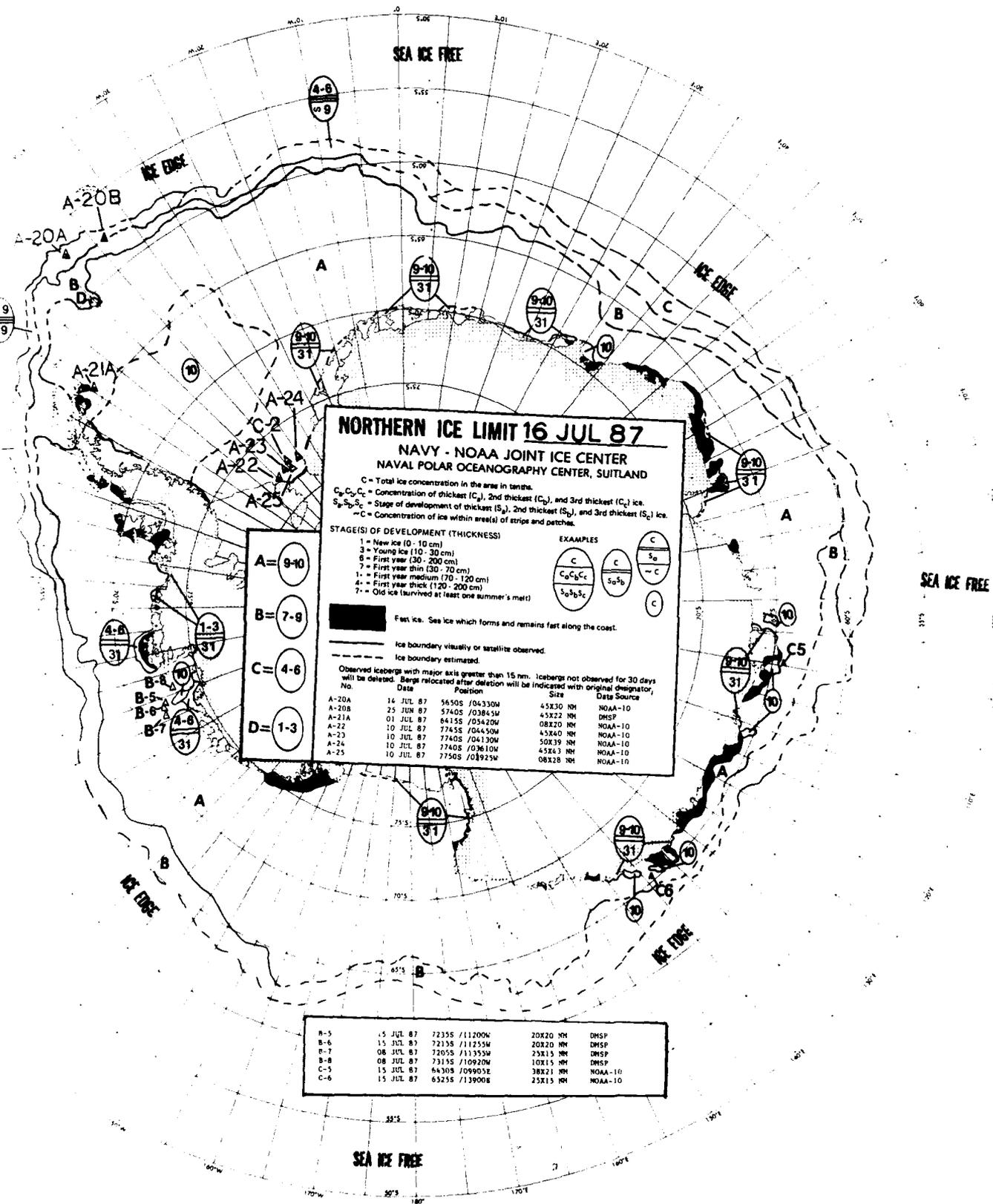
Fast ice: Sea ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed.
 Ice boundary estimated.

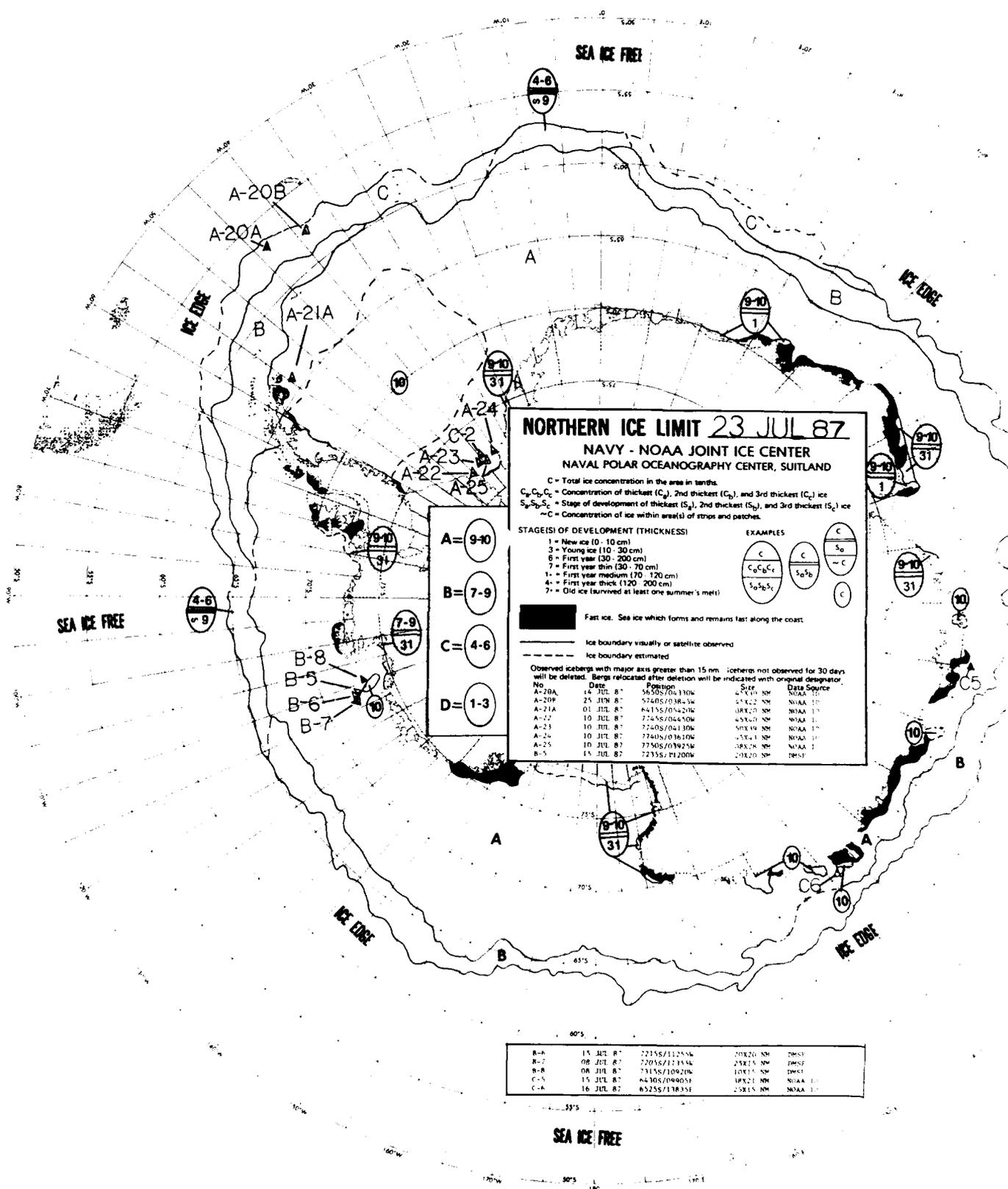
- A = 9-10
- B = 7-9
- C = 4-6
- D = 1-3

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	14 JUL 87	5650S /04330W	45X30 NM	NOAA-10
A-20B	25 JUN 87	5740S /03845W	45X22 NM	DMSP
A-21A	01 JUL 87	6415S /05420W	08X20 NM	NOAA-10
A-22	10 JUL 87	7745S /04450W	45X40 NM	NOAA-10
A-23	10 JUL 87	7740S /04130W	50X33 NM	NOAA-10
A-24	10 JUL 87	7740S /03610W	45X43 NM	NOAA-10
A-25	10 JUL 87	7750S /08925W	08X28 NM	NOAA-10

B-5	15 JUL 87	7235S /11200E	20X20 NM	DMSP
B-6	15 JUL 87	7215S /11255W	20X20 NM	DMSP
B-7	08 JUL 87	7205S /11355W	25X15 NM	DMSP
B-8	08 JUL 87	7315S /10920W	10X15 NM	DMSP
C-5	15 JUL 87	6430S /09905E	38X21 NM	NOAA-10
C-6	15 JUL 87	6525S /13900E	25X15 NM	NOAA-10





NORTHERN ICE LIMIT 23 JUL 87
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year thin (30 - 70 cm)
- 4 = First year medium (70 - 120 cm)
- 5 = First year thick (120 - 200 cm)
- 6 = Old ice (survived at least one summer's melt)

Fast ice. See ice which forms and remains fast along the coast.

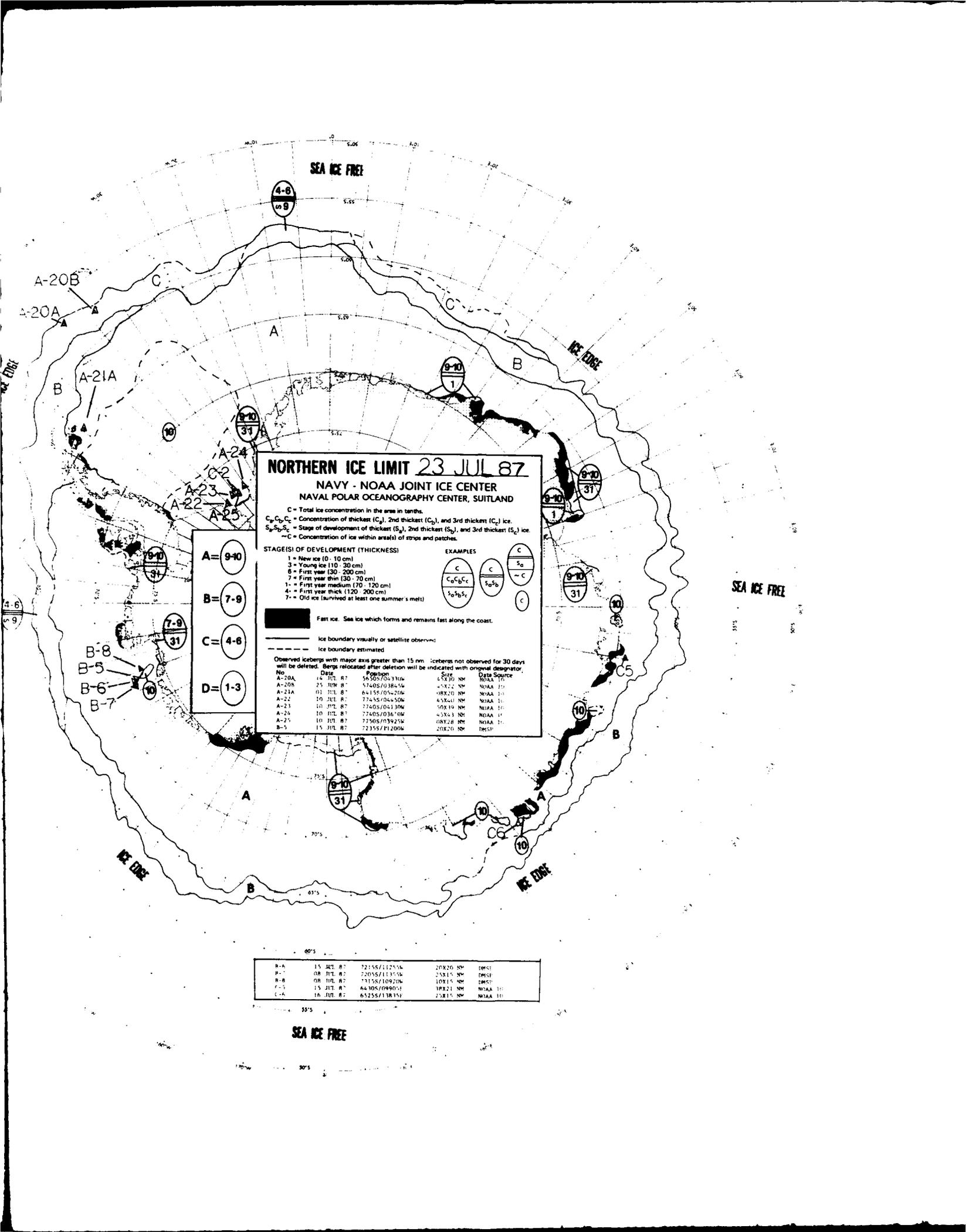
Ice boundary visually or satellite observed

Ice boundary estimated

Observed icebergs with major axis greater than 15 m. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	14 JUL 87	5630S/0433W	45X10 NM	NOAA 17
A-20B	25 JUL 87	5740S/03843W	25X12 NM	NOAA 17
A-21A	01 JUL 87	6415S/05421W	18X10 NM	NOAA 17
A-22	10 JUL 87	7745S/04450W	45X10 NM	NOAA 17
A-23	10 JUL 87	7740S/04130W	50X10 NM	NOAA 17
A-24	10 JUL 87	7740S/03820W	45X10 NM	NOAA 17
A-25	10 JUL 87	7740S/03925W	38X8 NM	NOAA 17
B-5	15 JUL 87	7235S/11200W	29X10 NM	DMSP

B-4	15 JUL 87	7235S/11255W	20X20 NM	DMSP
B-7	08 JUL 87	7205S/11155W	25X15 NM	DMSP
B-8	08 JUL 87	7315S/10920W	10X15 NM	DMSP
C-5	15 JUL 87	6430S/04905E	18X21 NM	NOAA 17
C-6	16 JUL 87	6325S/13835E	25X15 NM	NOAA 17



NORTHERN ICE LIMIT 23 JUL 87

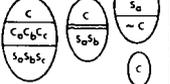
NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



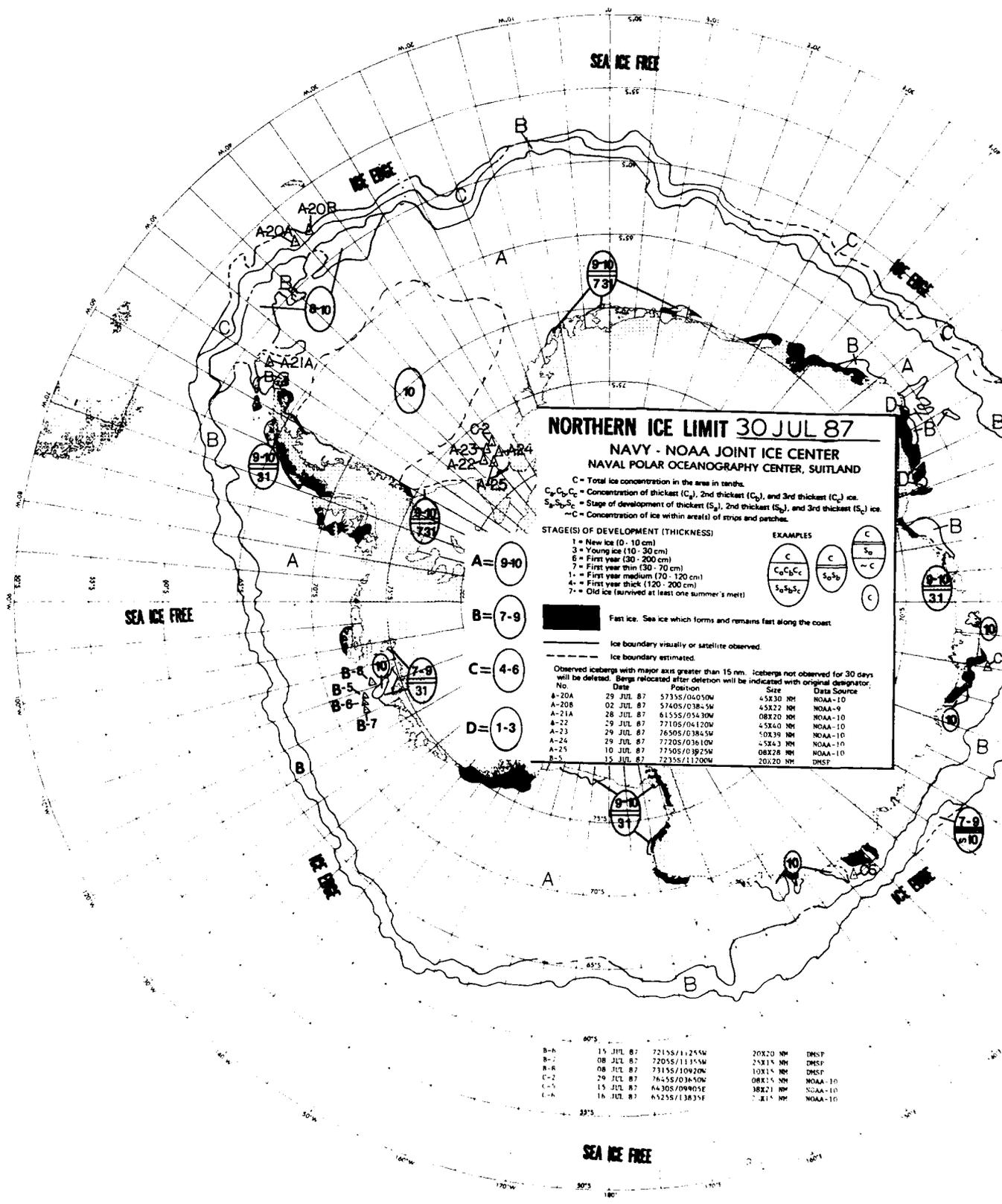
■ Fast ice. Sea ice which forms and remains fast along the coast.
 --- ice boundary visually or satellite observed.
 - - - - - ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	14 JUL 87	5650S/0310W	45X30 NM	NOAA 10
A-20B	25 JUL 87	5740S/03845W	45X22 NM	NOAA 10
A-21A	01 JUL 87	6415S/05420W	10X20 NM	NOAA 10
A-22	10 JUL 87	7345S/04450W	45X40 NM	NOAA 10
A-23	10 JUL 87	7740S/04110W	40X19 NM	NOAA 10
A-24	10 JUL 87	7740S/03610W	45X43 NM	NOAA 10
A-25	10 JUL 87	7500S/03925W	10X28 NM	NOAA 10
B-5	15 JUL 87	7235S/01200W	20X20 NM	DMSP

- A = 9-10
- B = 7-9
- C = 4-6
- D = 1-3

B-A	15 JUL 87	7215S/11255W	20X20 NM	DMSP
B-7	08 JUL 87	7205S/11355W	25X15 NM	DMSP
B-8	08 JUL 87	7315S/10920W	10X15 NM	DMSP
F-5	15 JUL 87	6430S/04905W	10X21 NM	NOAA 10
C-6	16 JUL 87	6525S/13835E	25X15 NM	NOAA 10



NORTHERN ICE LIMIT 30 JUL 87

**NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUTLAND**

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$
 $\frac{S_1 S_2 S_3}{-C}$

$\frac{C}{S_1}$
 $\frac{C}{-C}$

$\frac{C}{S_1}$
 $\frac{C}{-C}$

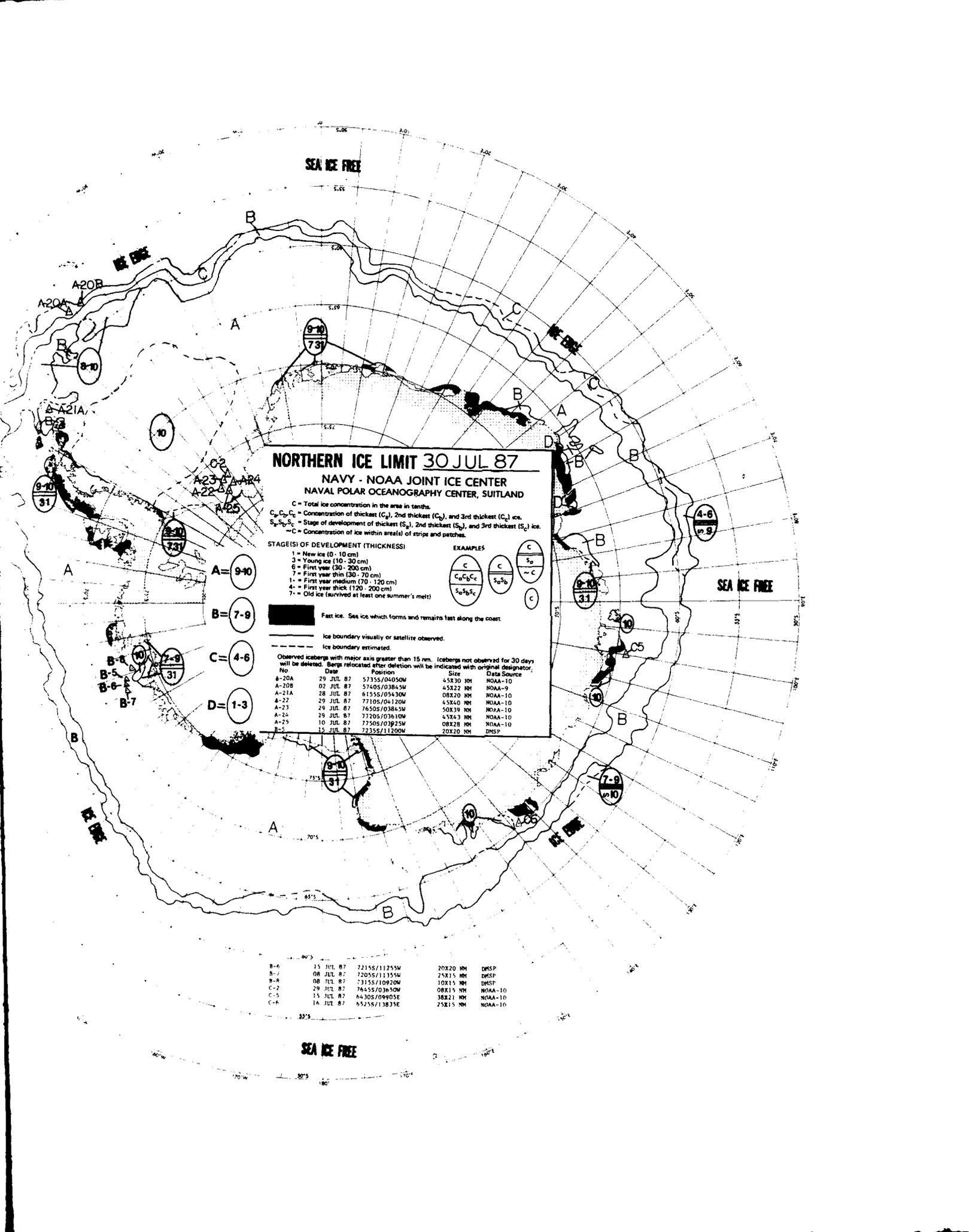
A = 9-10
B = 7-9
C = 4-6
D = 1-3

Fast ice: Sea ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed.
 Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	29 JUL 87	5735S/04050W	45X20 NM	NOAA-10
A-20B	02 JUL 87	5740S/03855W	45X22 NM	NOAA-9
A-21A	28 JUL 87	6155S/05430W	08X20 NM	NOAA-10
A-22	29 JUL 87	7110S/04120W	45X40 NM	NOAA-10
A-23	29 JUL 87	7650S/03845W	10X30 NM	NOAA-10
A-24	29 JUL 87	7720S/03610W	5X43 NM	NOAA-10
A-25	10 JUL 87	7750S/03925W	08X28 NM	NOAA-10
B-5	15 JUL 87	7235S/11700W	20X20 NM	DMSP

B-6	15 JUL 87	7215S/11255W	20X20 NM	DMSP
B-7	08 JUL 87	7205S/11355W	25X15 NM	DMSP
B-8	08 JUL 87	7315S/10920W	10X15 NM	DMSP
C-2	29 JUL 87	7645S/03850W	08X15 NM	NOAA-10
C-3	15 JUL 87	6430S/09050E	38X21 NM	NOAA-10
C-4	16 JUL 87	6525S/13835E	7.8X5 NM	NOAA-10



NORTHERN ICE LIMIT 30 JUL 87

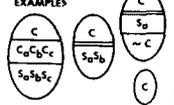
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

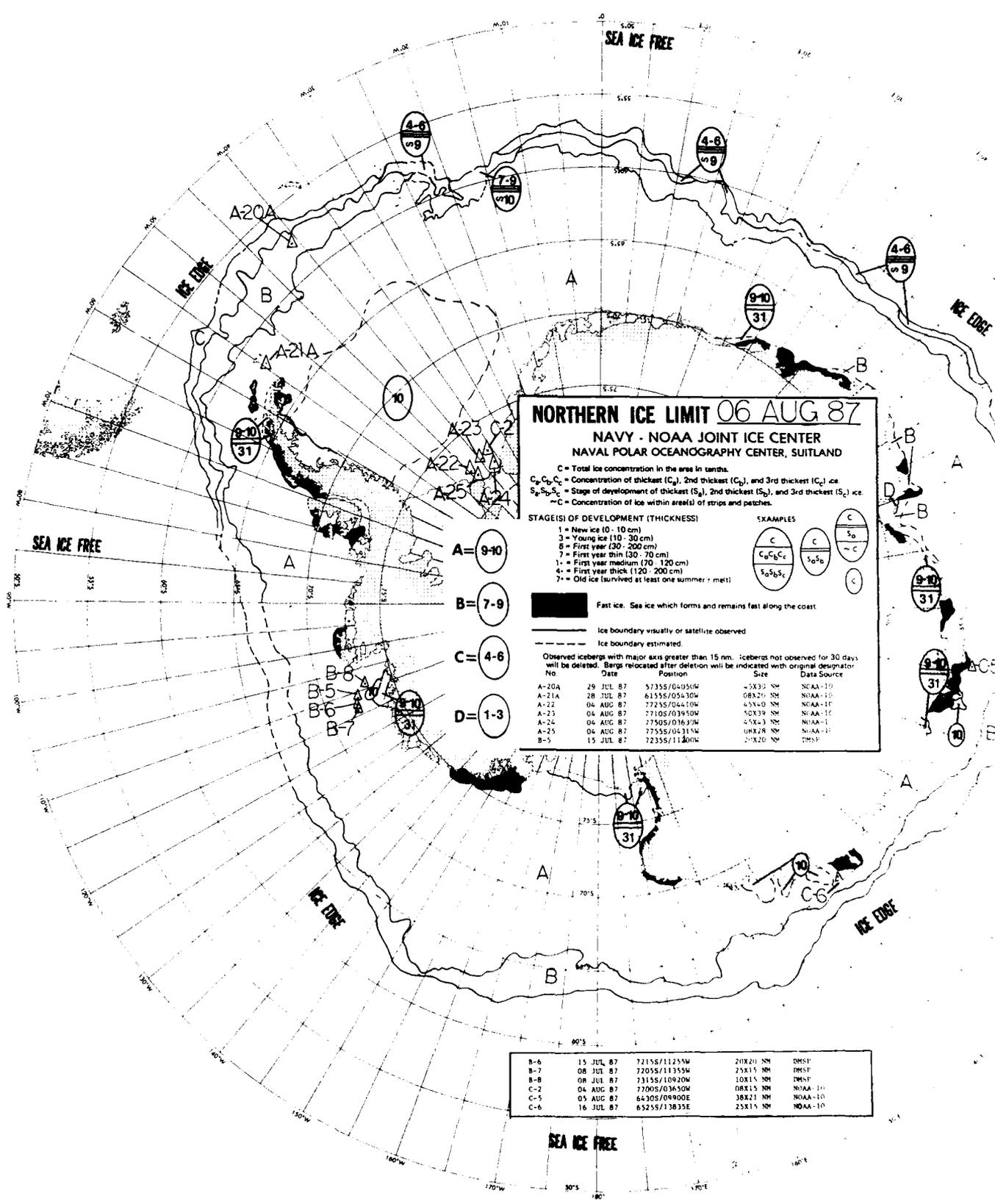


Fast ice. See ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed.
 Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	29 JUL 87	57355/04050M	45X30 NM	NOAA-10
A-20B	02 JUL 87	57405/03845M	45X22 NM	NOAA-9
A-21A	28 JUL 87	61555/05430M	08X20 NM	NOAA-10
A-22	29 JUL 87	77105/04120W	45X40 NM	NOAA-10
A-23	29 JUL 87	76505/03845M	50X39 NM	NOAA-10
A-24	29 JUL 87	77205/03610W	45X43 NM	NOAA-10
A-25	10 JUL 87	77505/03925W	08X28 NM	NOAA-10
B-5	15 JUL 87	72355/11200M	20X20 NM	DHSP

B-6	15 JUL 87	72155/11255W	20X20 NM	DHSP
B-7	08 JUL 87	72055/11355W	25X15 NM	DHSP
B-8	08 JUL 87	73155/10920W	10X15 NM	DHSP
C-2	29 JUL 87	76455/03650W	08X15 NM	NOAA-10
C-5	15 JUL 87	64305/09905E	38X21 NM	NOAA-10
C-6	16 JUL 87	65255/13835E	25X15 NM	NOAA-10



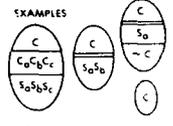
NORTHERN ICE LIMIT 06 AUG 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 a, b, c = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer melt)



- A=9-10**
- B=7-9**
- C=4-6**
- D=1-3**

Fast ice. Sea ice which forms and remains fast along the coast

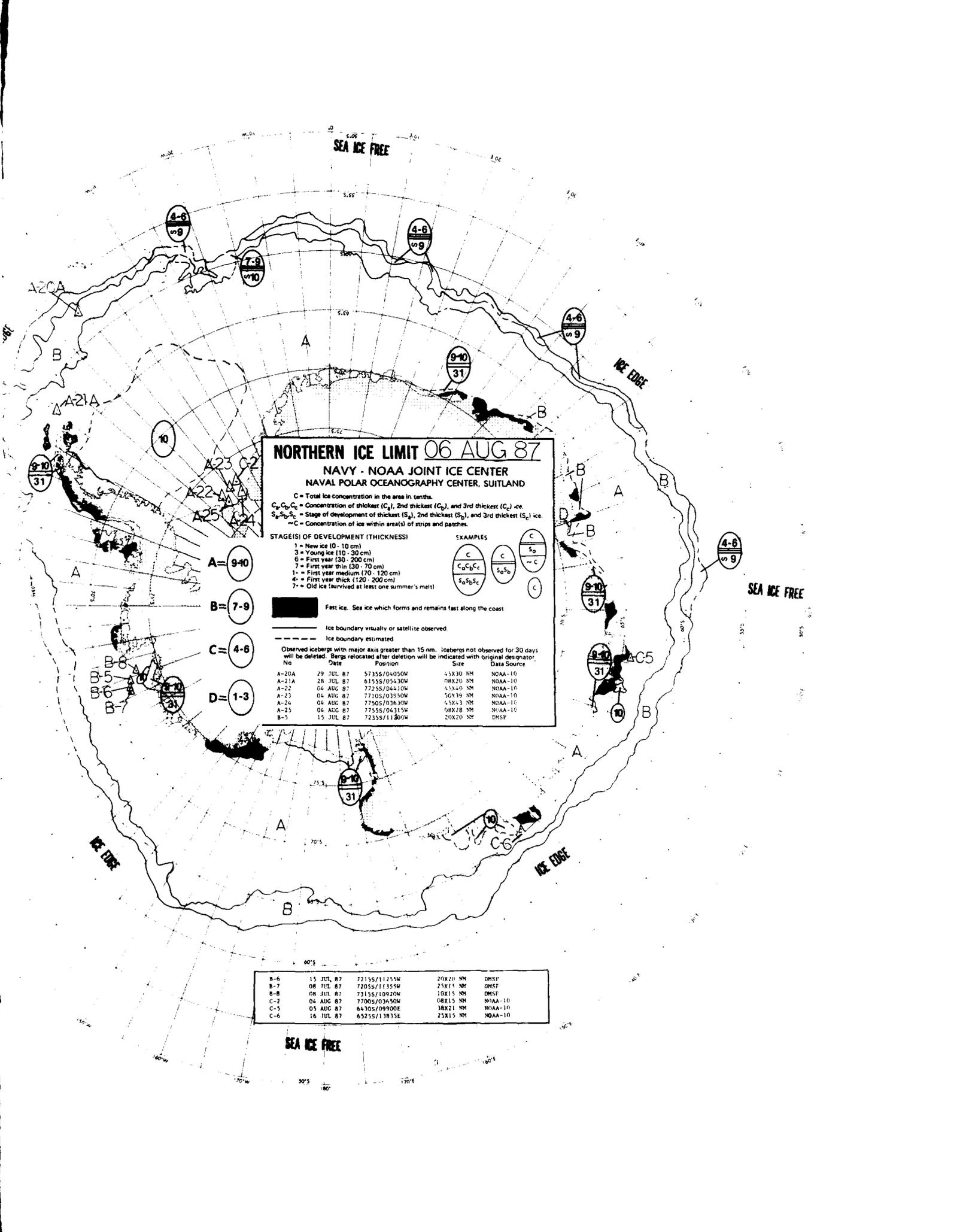
— Ice boundary visually or satellite observed

- - - Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator No.

No.	Date	Position	Size	Data Source
A-20A	29 JUL 87	5735S/0405W	45X35 NM	NOAA-10
A-21A	28 JUL 87	6155S/05430W	08X20 NM	NOAA-10
A-22	04 AUG 87	7225S/04410W	45X40 NM	NOAA-10
A-23	04 AUG 87	7710S/03950W	50X39 NM	NOAA-10
A-24	04 AUG 87	7750S/0369W	45X40 NM	NOAA-10
A-25	04 AUG 87	7755S/04315W	08X28 NM	NOAA-10
B-5	15 JUL 87	7235S/11400W	20X20 NM	DMSP

B-6	15 JUL 87	7215S/11255W	20X20 NM	DMSP
B-7	08 JUL 87	7205S/11355W	25X15 NM	DMSP
B-8	08 JUL 87	7315S/10920W	10X15 NM	DMSP
C-2	04 AUG 87	7700S/03650W	08X15 NM	NOAA-10
C-5	05 AUG 87	6430S/09900E	38X23 NM	NOAA-10
C-6	16 JUL 87	6525S/13835E	25X15 NM	NOAA-10



NORTHERN ICE LIMIT 06 AUG 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 $\sim C$ = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year (30 - 200 cm)
- 4 = First year thin (30 - 70 cm)
- 5 = First year medium (70 - 120 cm)
- 6 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$
 $\frac{S_1 S_2 S_3}{\sim C}$

$\frac{C}{S_1 S_2 S_3}$
 $\frac{C}{\sim C}$

$\frac{C}{\sim C}$
 $\frac{C}{\sim C}$

A = 9-10
B = 7-9
C = 4-6
D = 1-3

Fast ice. See ice which forms and remains fast along the coast

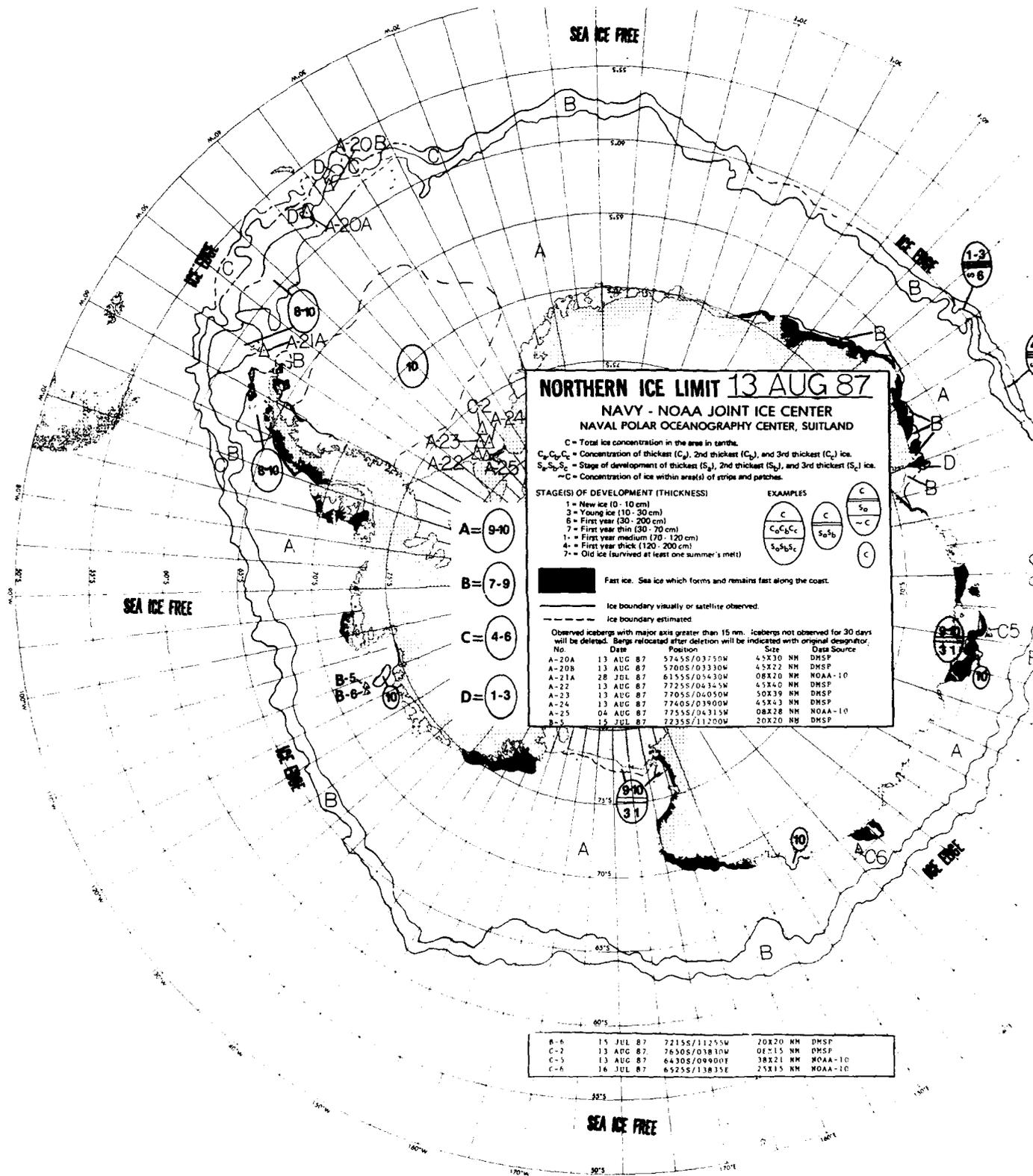
Ice boundary visually or satellite observed

Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	29 JUL 87	5735S/04050W	45X30 NM	NOAA-10
A-21A	28 JUL 87	6155S/05430W	08X20 NM	NOAA-10
A-22	04 AUG 87	7725S/04410W	45X40 NM	NOAA-10
A-23	04 AUG 87	7710S/03950W	56X39 NM	NOAA-10
A-24	04 AUG 87	7750S/03630W	45X43 NM	NOAA-10
A-25	04 AUG 87	7755S/04315W	08X08 NM	NOAA-10
B-5	15 JUL 87	7235S/11300W	20X20 NM	DMSP

B-6	15 JUL 87	7215S/11255W	20X20 NM	DMSP
B-7	08 JUL 87	7205S/11355W	25X15 NM	DMSP
B-8	08 JUL 87	7315S/10920W	10X15 NM	DMSP
C-2	04 AUG 87	7700S/03650W	08X15 NM	NOAA-10
C-5	05 AUG 87	6430S/09900E	38X21 NM	NOAA-10
C-6	16 JUL 87	6525S/13835E	25X15 NM	NOAA-10



NORTHERN ICE LIMIT 13 AUG 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 $\sim C$ = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year (30 - 200 cm)
- 4 = First year thin (30 - 70 cm)
- 5 = First year medium (70 - 120 cm)
- 6 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$
 $\frac{S_1 S_2 S_3}{\sim C}$

$\frac{C}{S_1}$
 $\frac{C}{S_2}$
 $\frac{C}{S_3}$

$\frac{C}{\sim C}$
 $\frac{C}{\sim C}$
 $\frac{C}{\sim C}$

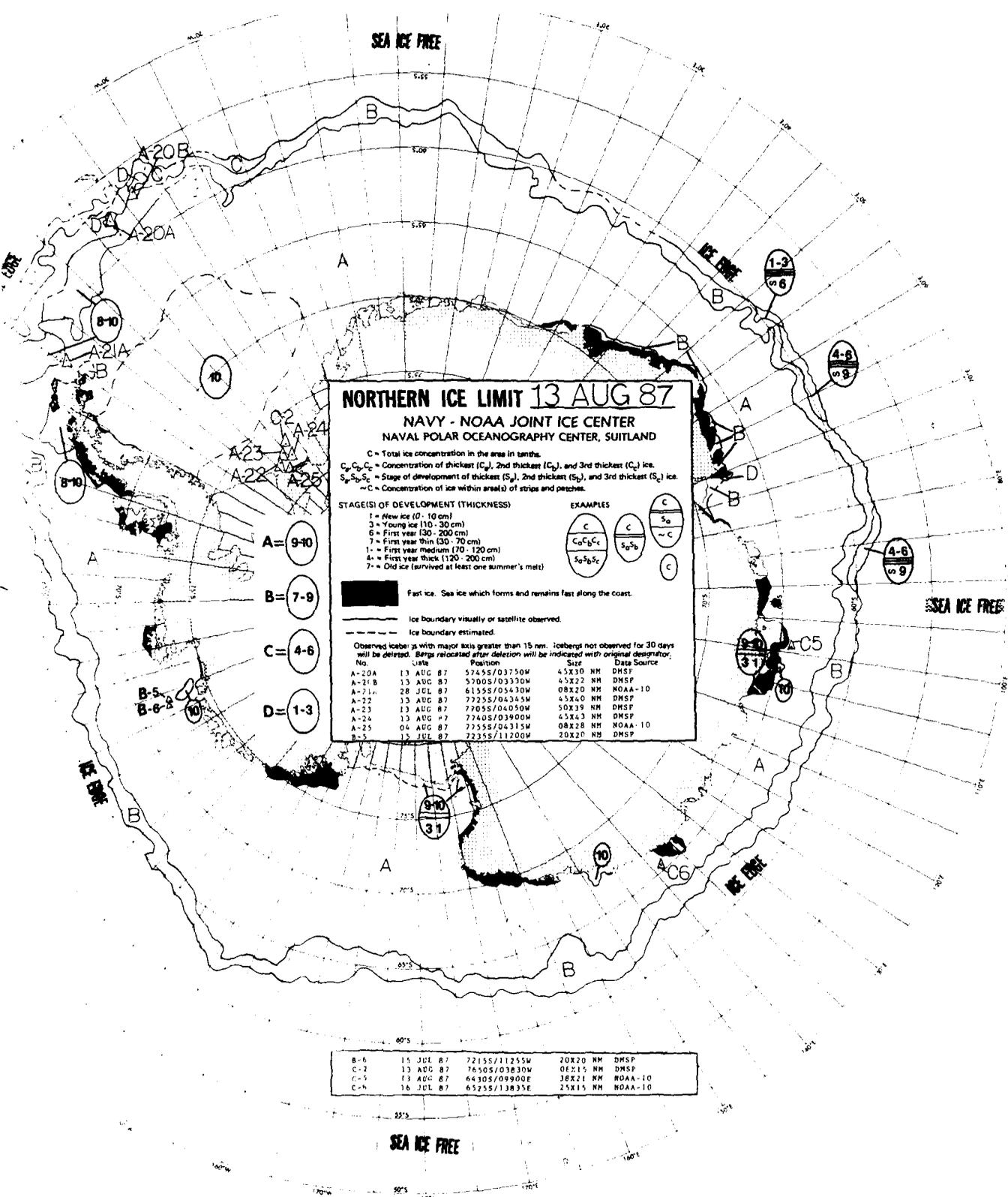
Legend:

- Fast ice. Sea ice which forms and remains fast along the coast.
- Ice boundary visually or satellite observed.
- Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	13 AUG 87	5745S/03750W	45X30 NM	DMSP
A-20B	13 AUG 87	5700S/03330W	45X22 NM	DMSP
A-21A	28 JUL 87	6155S/03430W	08X20 NM	NOAA-10
A-22	13 AUG 87	7755S/0435W	45X40 NM	DMSP
A-23	13 AUG 87	7705S/04050W	50X39 NM	DMSP
A-24	13 AUG 87	7740S/03900W	45X43 NM	DMSP
A-25	04 AUG 87	7755S/04315W	08X28 NM	NOAA-10
B-5	15 JUL 87	7235S/11200W	20X20 NM	DMSP

B-6	15 JUL 87	7215S/11255W	20X20 NM	DMSP
C-2	13 AUG 87	7650S/03810W	08X15 NM	DMSP
C-5	13 AUG 87	6430S/09000E	38X21 NM	NOAA-10
C-6	16 JUL 87	6525S/13835E	25X15 NM	NOAA-10



NORTHERN ICE LIMIT 13 AUG 87

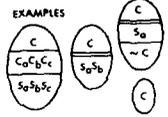
NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

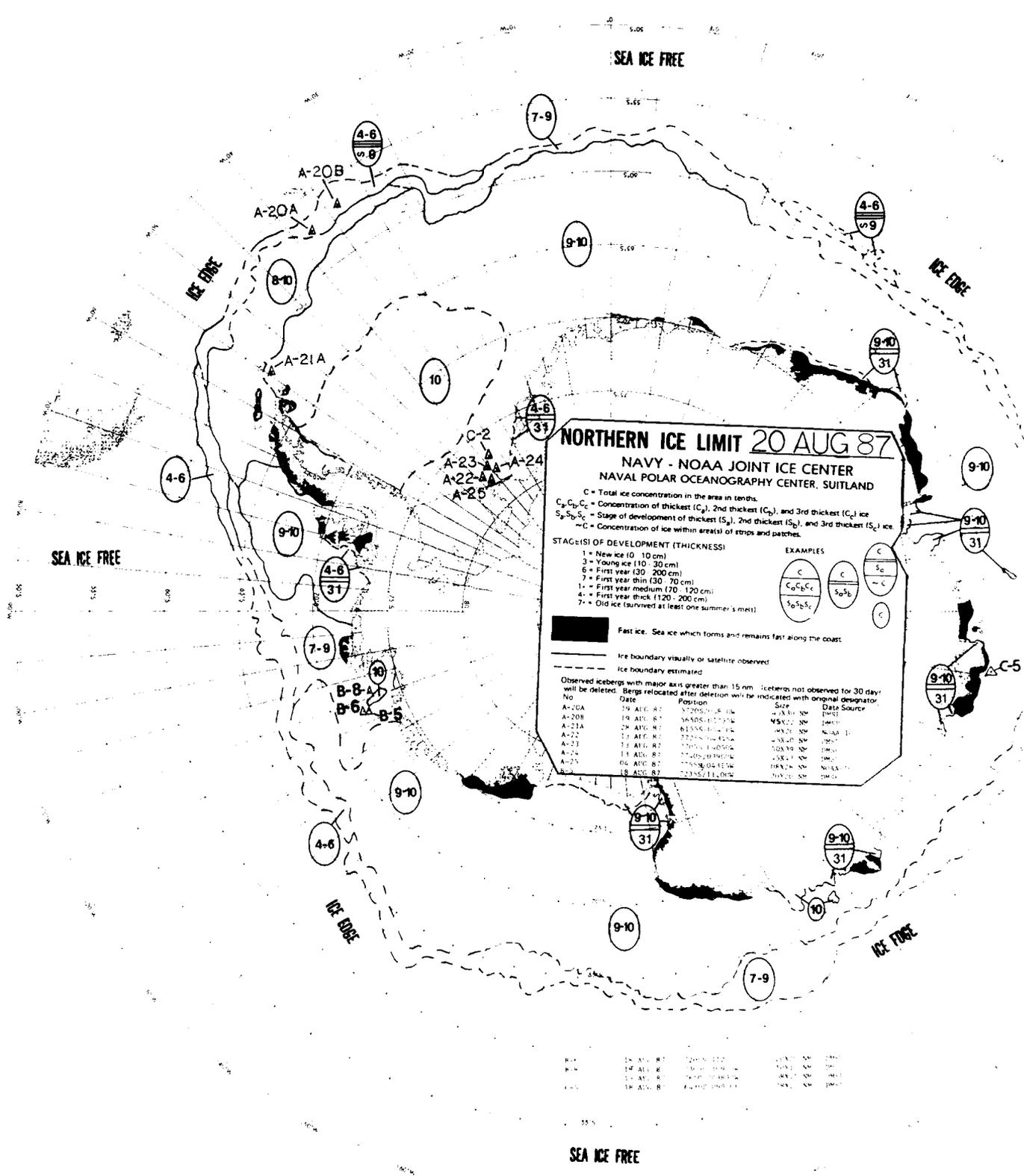


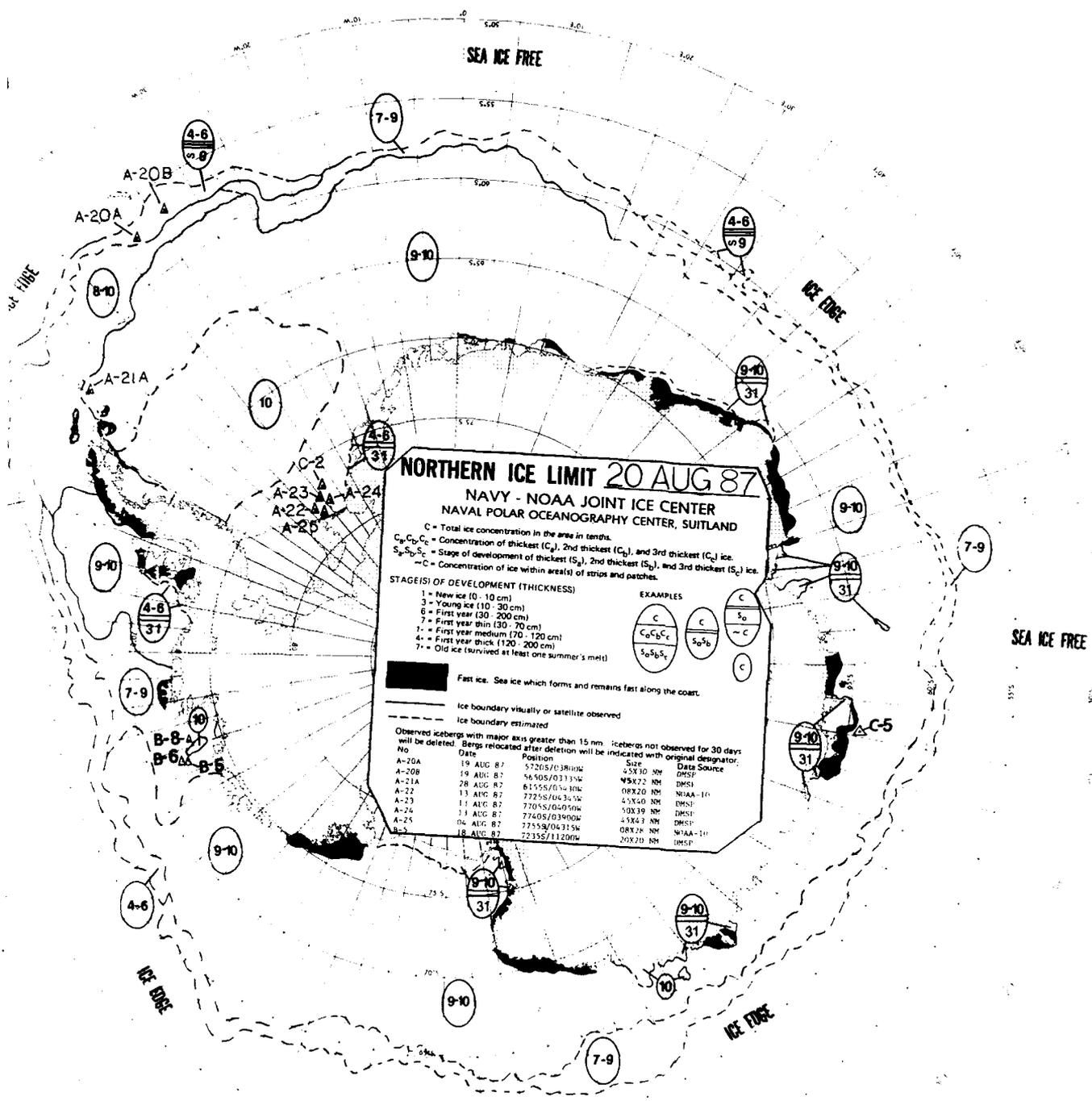
- Fast ice. Sea ice which forms and remains fast along the coast.
- Ice boundary visually or satellite observed.
- Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs reclassified after deletion will be indicated with original designator.

No.	Lists	Position	Size	Data Source
A-20A	13 AUG 87	5745S/03750W	45X30 NM	DHSP
A-21B	15 AUG 87	5700S/03330W	45X22 NM	DHSP
B-7	28 JUL 87	6155S/05630W	08X20 NM	NOAA-10
A-22	13 AUG 87	7225S/04345W	45X40 NM	DHSP
A-23	13 AUG 87	7205S/04050W	50X39 NM	DHSP
A-24	13 AUG 87	7240S/03900W	45X43 NM	DHSP
A-25	04 AUG 87	7255S/04315W	08X28 NM	NOAA-10
B-5	15 JUL 87	7235S/11200W	20X20 NM	DHSP

B-6	15 JUL 87	7215S/11255W	20X20 NM	DHSP
C-2	13 AUG 87	7650S/03830W	06X15 NM	DHSP
C-5	13 AUG 87	6430S/09900E	38X21 NM	NOAA-10
C-4	16 JUL 87	6525S/13835E	25X15 NM	NOAA-10





NORTHERN ICE LIMIT 20 AUG 87

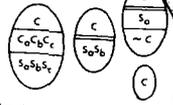
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year thin (30 - 70 cm)
- 4 = First year medium (70 - 120 cm)
- 5 = First year thick (120 - 200 cm)
- 6 = Old ice (survived at least one summer's melt)

EXAMPLES



Fast ice: Sea ice which forms and remains fast along the coast.

Ice boundary visually or satellite observed

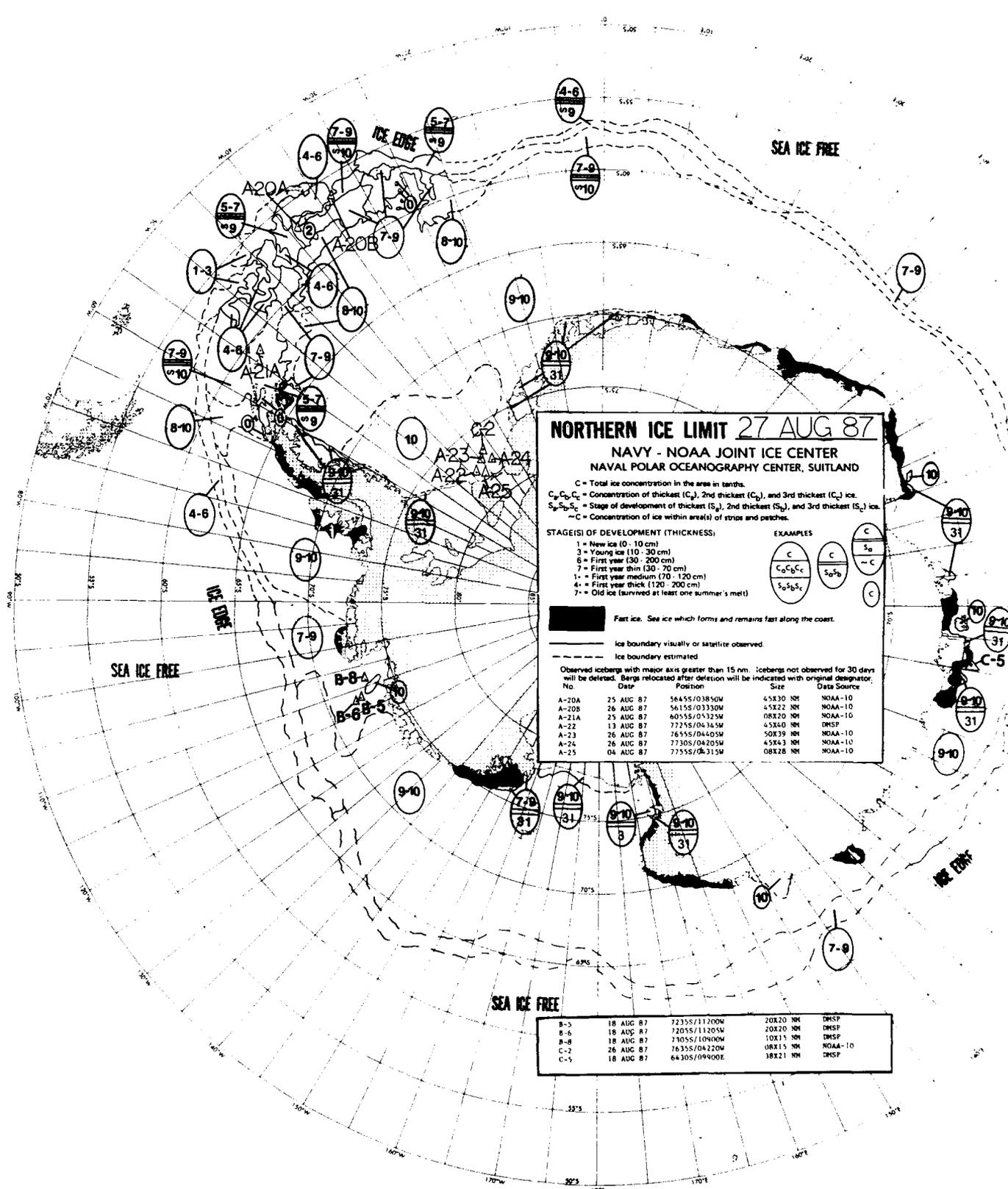
Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	19 AUG 87	5720S/0380W	45X30 NM	DMSP
A-20B	19 AUG 87	6650S/0333W	45X22 NM	DMSP
A-21A	28 AUG 87	6155S/03410W	08X20 NM	DMSP
A-22	13 AUG 87	7225S/06345W	45X40 NM	DMSP
A-23	13 AUG 87	7225S/06350W	50X39 NM	DMSP
A-24	06 AUG 87	7740S/03900W	45X43 NM	DMSP
A-25	06 AUG 87	7755S/04315W	08X24 NM	DMSP
B-5	18 AUG 87	7235S/1120W	20X20 NM	DMSP

B-8	18 AUG 87	7205S/1120W	20X20 NM	DMSP
B-6	18 AUG 87	7105S/1090W	10X15 NM	DMSP
C-5	18 AUG 87	7450S/0410W	08X15 NM	DMSP
C-5	18 AUG 87	6610S/04950W	08X23 NM	DMSP

SEA ICE FREE



NORTHERN ICE LIMIT 27 AUG 87

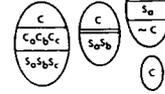
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



Fast ice. See ice which forms and remains fast along the coast.

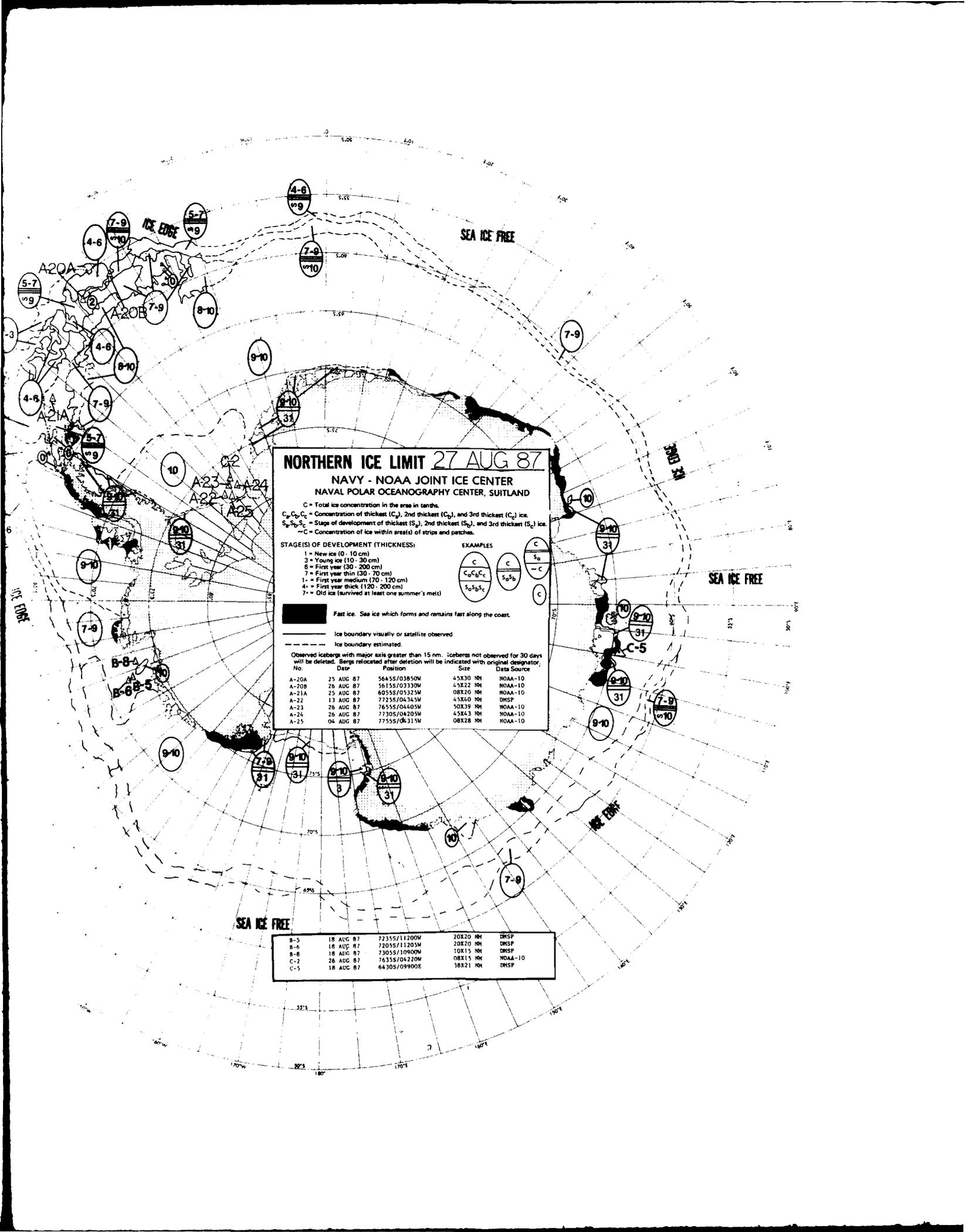
Ice boundary visually or satellite observed

Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. icebergs not observed for 30 days will be deleted. Bergs relocated after defetion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	25 AUG 87	5845S/03850W	45830 NM	NOAA-10
A-20B	26 AUG 87	5615S/03330W	45822 NM	NOAA-10
A-21A	25 AUG 87	6055S/05325W	08820 NM	NOAA-10
A-22	13 AUG 87	7225S/06365W	45360 NM	DMSP
A-23	26 AUG 87	7655S/04405W	50839 NM	NOAA-10
A-24	26 AUG 87	7730S/04205W	45843 NM	NOAA-10
A-25	04 AUG 87	7755S/06315W	08828 NM	NOAA-10

B-5	18 AUG 87	7235S/11200W	20820 NM	DMSP
B-6	18 AUG 87	7205S/11205W	20820 NM	DMSP
B-8	18 AUG 87	7105S/10900W	10815 NM	DMSP
C-2	26 AUG 87	7635S/04220W	08815 NM	NOAA-10
C-5	18 AUG 87	6430S/09900E	18821 NM	DMSP



NORTHERN ICE LIMIT 27 AUG 87

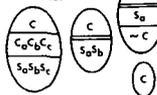
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS):

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

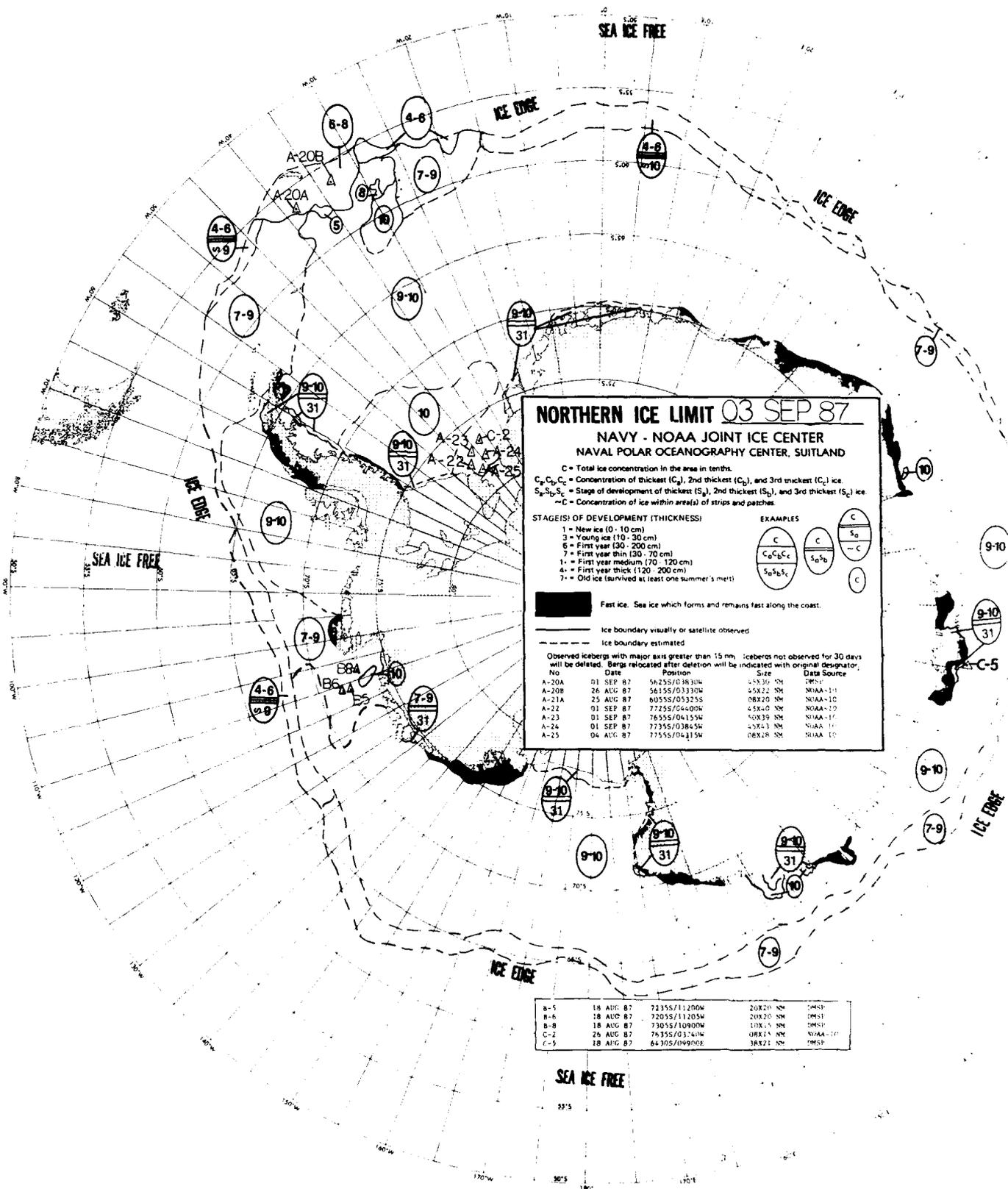


- Fast ice. Sea ice which forms and remains fast along the coast.
- Ice boundary visually or satellite observed.
- Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	25 AUG 87	5645S/03850W	45X30 NM	NOAA-10
A-20B	26 AUG 87	5615S/03330W	45X22 NM	NOAA-10
A-21A	25 AUG 87	6055S/05325W	08X20 NM	NOAA-10
A-22	13 AUG 87	7235S/04345W	43X60 NM	DRSP
A-23	26 AUG 87	7655S/04405W	50X39 NM	NOAA-10
A-24	26 AUG 87	7730S/04205W	45X43 NM	NOAA-10
A-25	04 AUG 87	7755S/04315W	08X28 NM	NOAA-10

B-5	18 AUG 87	7235S/11200W	20X20 NM	DRSP
B-6	18 AUG 87	7205S/11205W	20X20 NM	DRSP
B-8	18 AUG 87	7305S/10900W	10X15 NM	DRSP
C-2	26 AUG 87	7635S/04220W	08X15 NM	NOAA-10
C-5	18 AUG 87	6430S/09900E	38X21 NM	DRSP



NORTHERN ICE LIMIT 03 SEP 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C₁ C₂ C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
 S₁ S₂ S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

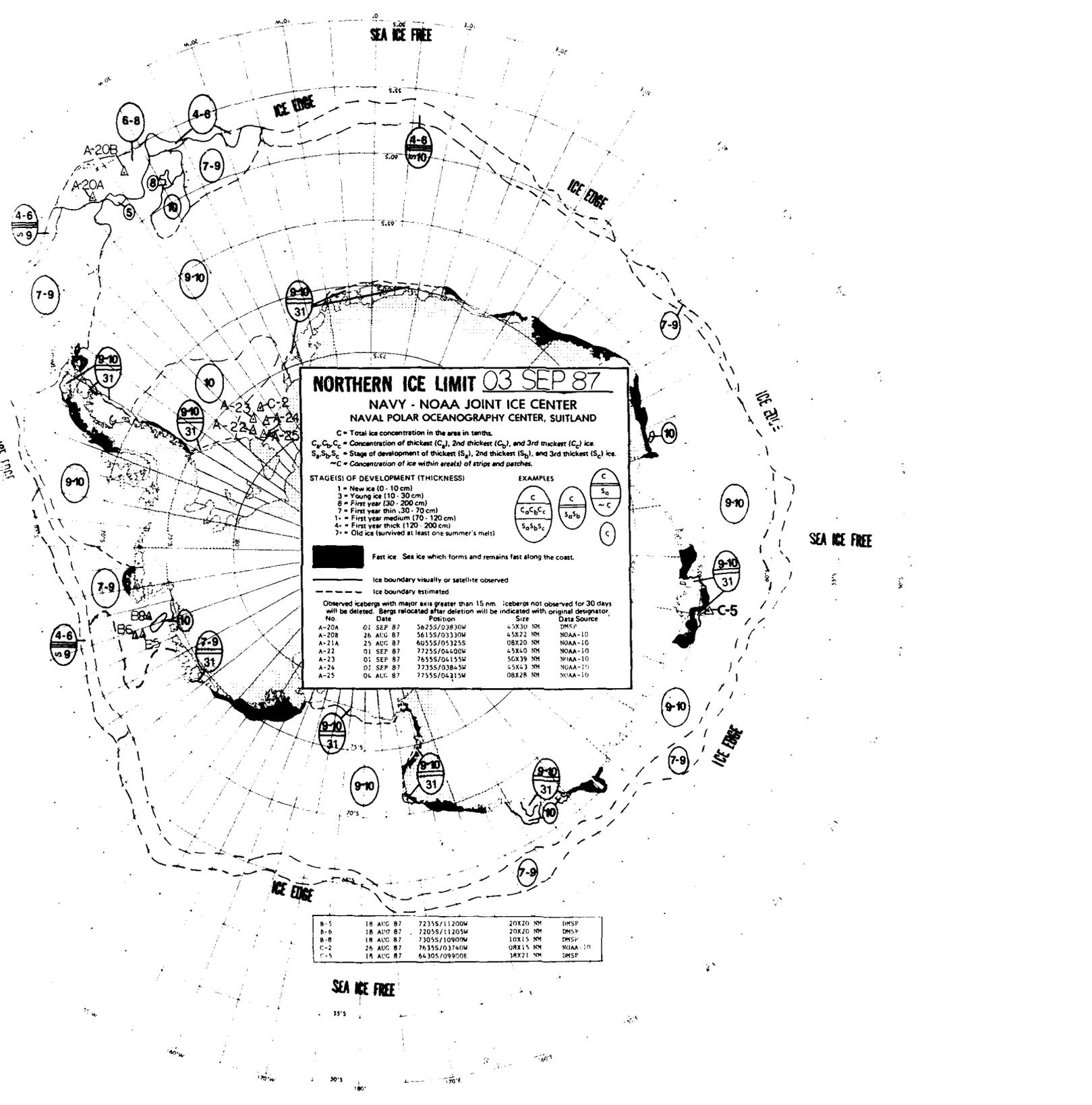
C	C	C
C ₁ C ₂ C ₃	S ₁ S ₂ S ₃	-C

Fast ice. See ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed
 Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No	Date	Position	Size	Data Source
A-20A	01 SEP 87	56.255/038.30W	45X30 NM	DMSP
A-20B	26 AUG 87	56.155/033.00W	45X22 NM	NOAA-11
A-21A	25 AUG 87	60.555/053.25S	08X20 NM	NOAA-10
A-22	01 SEP 87	77.255/044.00W	45X40 NM	NOAA-10
A-23	01 SEP 87	76.555/041.50W	50X35 NM	NOAA-11
A-24	01 SEP 87	77.355/038.50W	42X33 NM	NOAA-11
A-25	04 AUG 87	77.555/041.50W	08X18 NM	NOAA-10

B-5	18 AUG 87	72.155/112.00W	20X20 NM	DMSP
B-6	18 AUG 87	72.055/112.05W	20X20 NM	DMSP
B-8	18 AUG 87	73.055/109.00W	10X15 NM	DMSP
C-2	26 AUG 87	76.355/037.40W	08X15 NM	NOAA-10
C-5	18 AUG 87	64.305/049.00E	38X21 NM	DMSP



NORTHERN ICE LIMIT 03 SEP 87

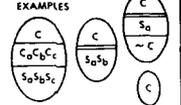
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year thin (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

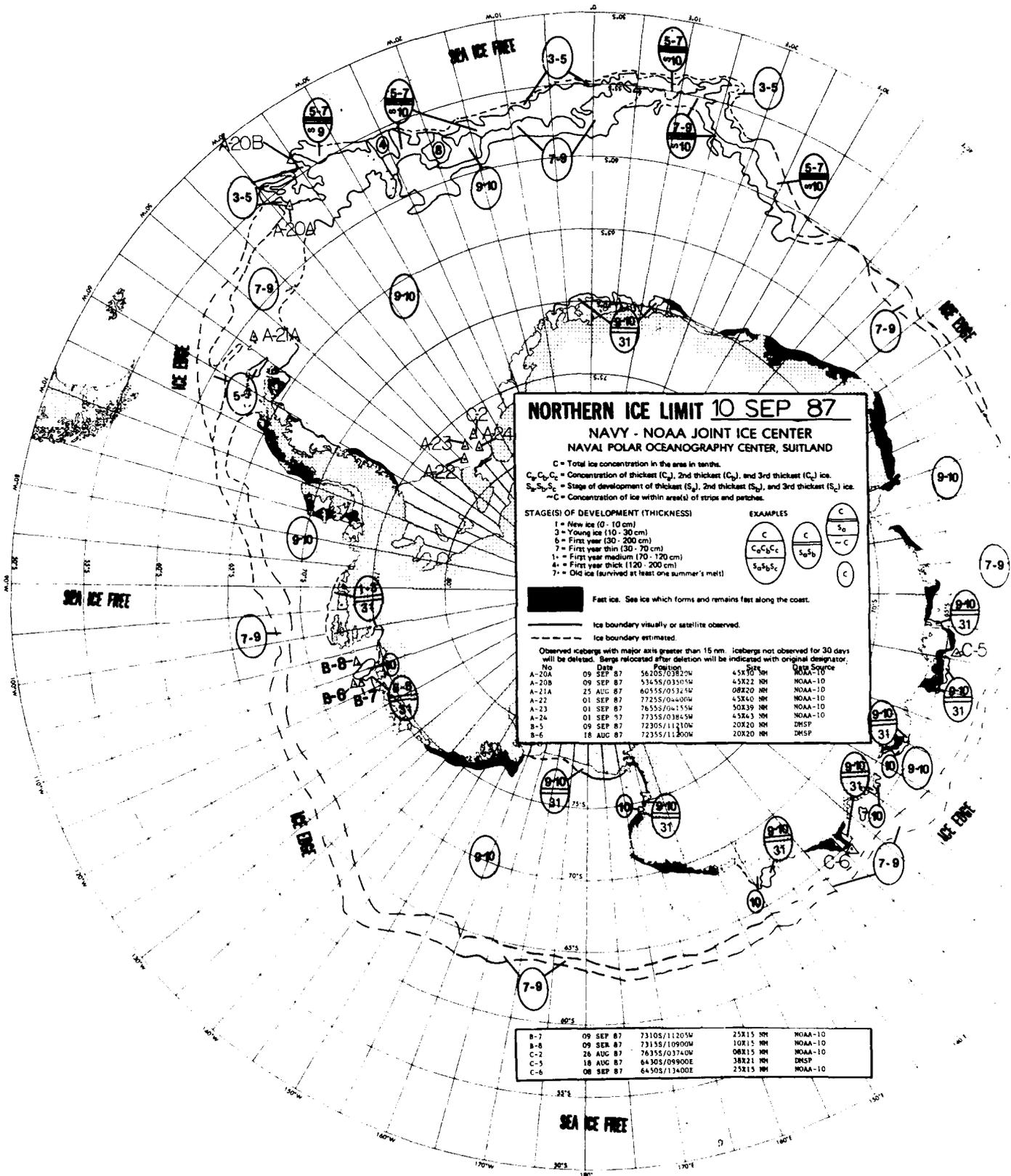


- Fast ice: Sea ice which forms and remains fast along the coast.
- Ice boundary visually or satellite observed
- Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	01 SEP 87	56255/03830W	45X30 NM	DMSP
A-20B	26 AUG 87	56155/03330W	45X22 NM	NOAA-10
A-21A	25 AUG 87	60555/053255	08X20 NM	NOAA-10
A-22	01 SEP 87	72555/04400W	45X40 NM	NOAA-10
A-23	01 SEP 87	76555/04155W	50X39 NM	NOAA-10
A-24	01 SEP 87	72555/03865W	45X43 NM	NOAA-10
A-25	04 AUG 87	77555/04115W	08X28 NM	NOAA-10

B-5	18 AUG 87	72355/11200W	20X20 NM	DMSP
B-6	18 AUG 87	72055/11205W	20X20 NM	DMSP
B-8	18 AUG 87	73055/10900W	10X15 NM	DMSP
C-2	26 AUG 87	76355/03740W	08X15 NM	NOAA-10
C-5	18 AUG 87	64305/09900E	38X21 NM	DMSP

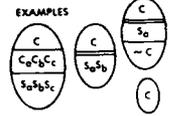


NORTHERN ICE LIMIT 10 SEP 87
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C₁C₂C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
 S₁S₂S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

1 = New ice (0 - 10 cm)
 3 = Young ice (10 - 30 cm)
 6 = First year (30 - 200 cm)
 7 = First year thin (30 - 70 cm)
 1* = First year medium (70 - 120 cm)
 4 = First year thick (120 - 200 cm)
 7 = Old ice (survived at least one summer's melt)



Fast ice. See ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed.
 Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No	Date	Position	Size	Date Source
A-20A	09 SEP 87	5820S/02820W	45X10 NM	NOAA-10
A-20B	09 SEP 87	5345S/03505W	45X22 NM	NOAA-10
A-21A	25 AUG 87	6055S/05325W	08X20 NM	NOAA-10
A-22	01 SEP 87	7225S/04400W	45X40 NM	NOAA-10
A-23	01 SEP 87	7655S/04155W	50X39 NM	NOAA-10
A-24	01 SEP 87	7735S/03845W	45X43 NM	NOAA-10
B-5	09 SEP 87	7230S/11210W	20X20 NM	DMSP
B-6	18 AUG 87	7235S/11200W	20X20 NM	DMSP

B-7	09 SEP 87	7310S/11205W	25X15 NM	NOAA-10
B-8	09 SEP 87	7315S/10900W	10X15 NM	NOAA-10
C-2	26 AUG 87	7635S/03740W	08X15 NM	NOAA-10
C-5	18 AUG 87	6430S/09900E	38X21 NM	DMSP
C-6	08 SEP 87	6450S/11340E	25X15 NM	NOAA-10

NORTHERN ICE LIMIT 10 SEP 87

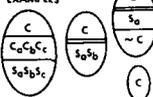
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



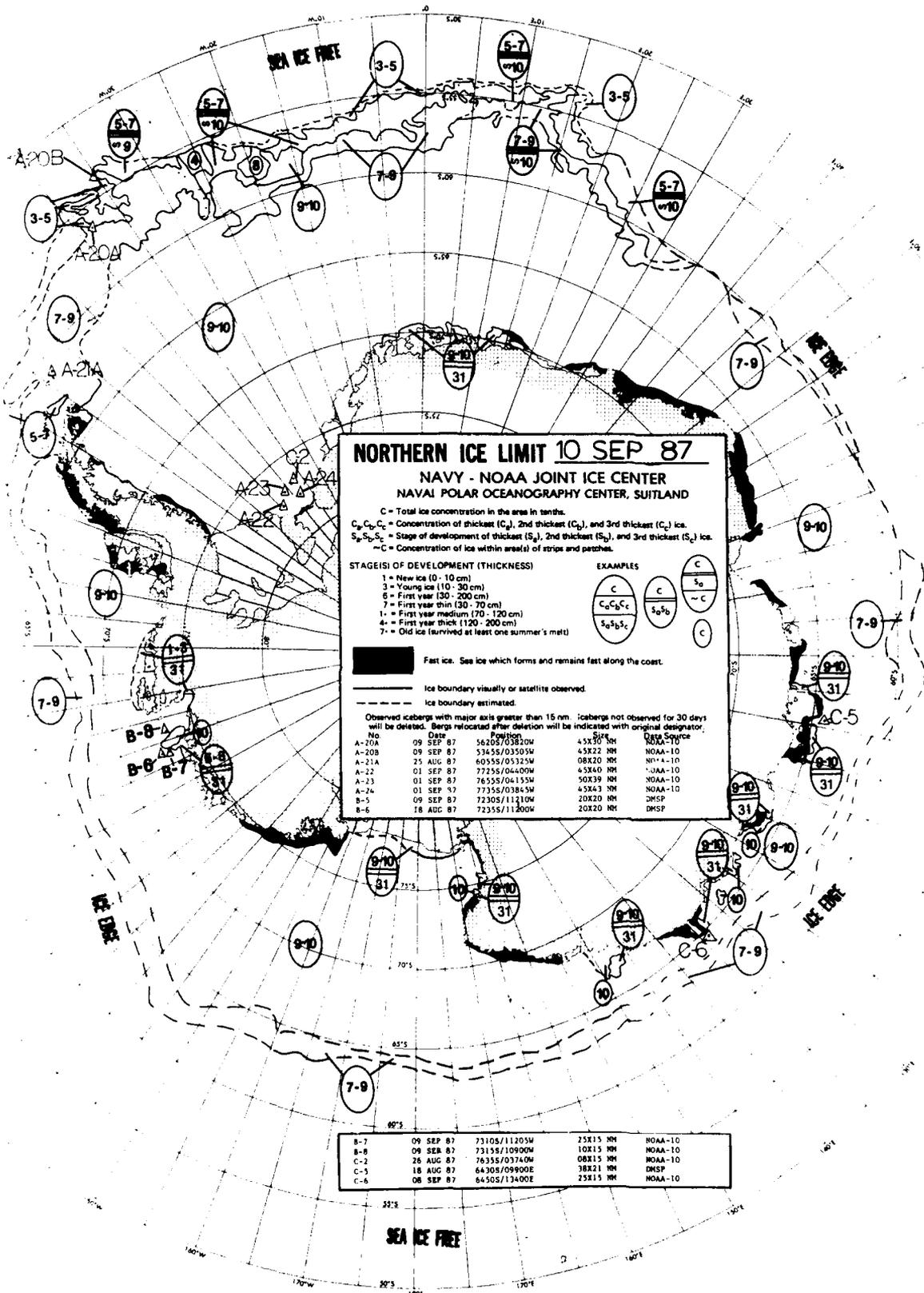
Fast ice. See ice which forms and remains fast along the coast.

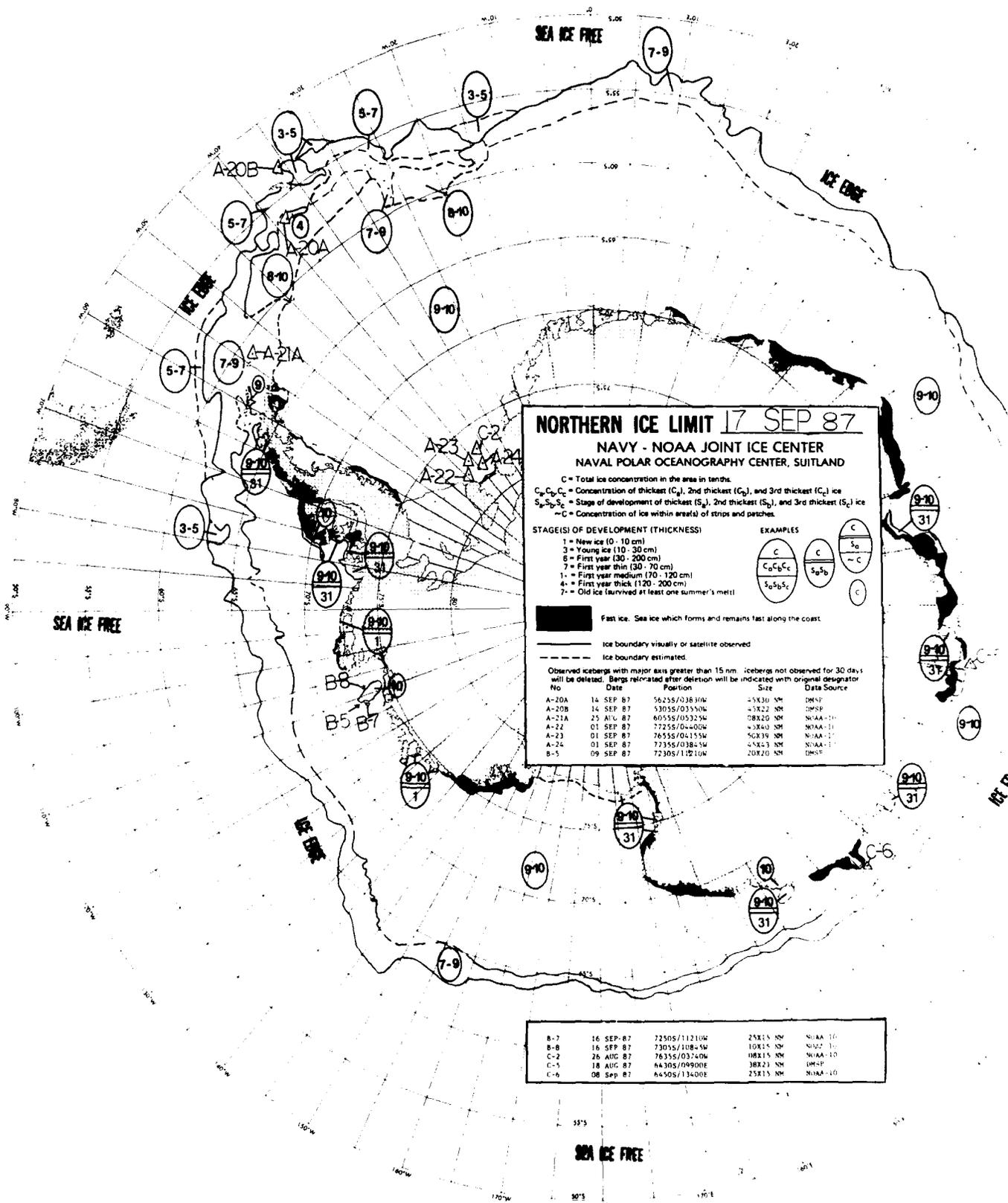
Ice boundary visually or satellite observed.
 Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Obs. Source
A-20A	09 SEP 87	5620S/03820W	45X30 NM	NOAA-10
A-20B	09 SEP 87	5345S/03505W	45X22 NM	NOAA-10
A-21A	25 AUG 87	6055S/03325W	08X20 NM	NAVY-10
A-22	01 SEP 87	7725S/04400W	45X40 NM	NOAA-10
A-23	01 SEP 87	7655S/04155W	50X39 NM	NOAA-10
A-24	01 SEP 87	7735S/03845W	45X43 NM	NOAA-10
B-5	09 SEP 87	7230S/11310W	20X20 NM	DMSP
B-6	18 AUG 87	7035S/11200W	20X20 NM	DMSP

B-7	09 SEP 87	7310S/11205W	25X15 NM	NOAA-10
B-8	09 SEP 87	7315S/10900W	10X15 NM	NOAA-10
C-2	26 AUG 87	7635S/03740W	08X15 NM	NOAA-10
C-5	18 AUG 87	6430S/09900E	38X21 NM	DMSP
C-6	08 SEP 87	6450S/13400E	25X15 NM	NOAA-10





NORTHERN ICE LIMIT 17 SEP 87

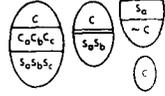
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice
 -C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



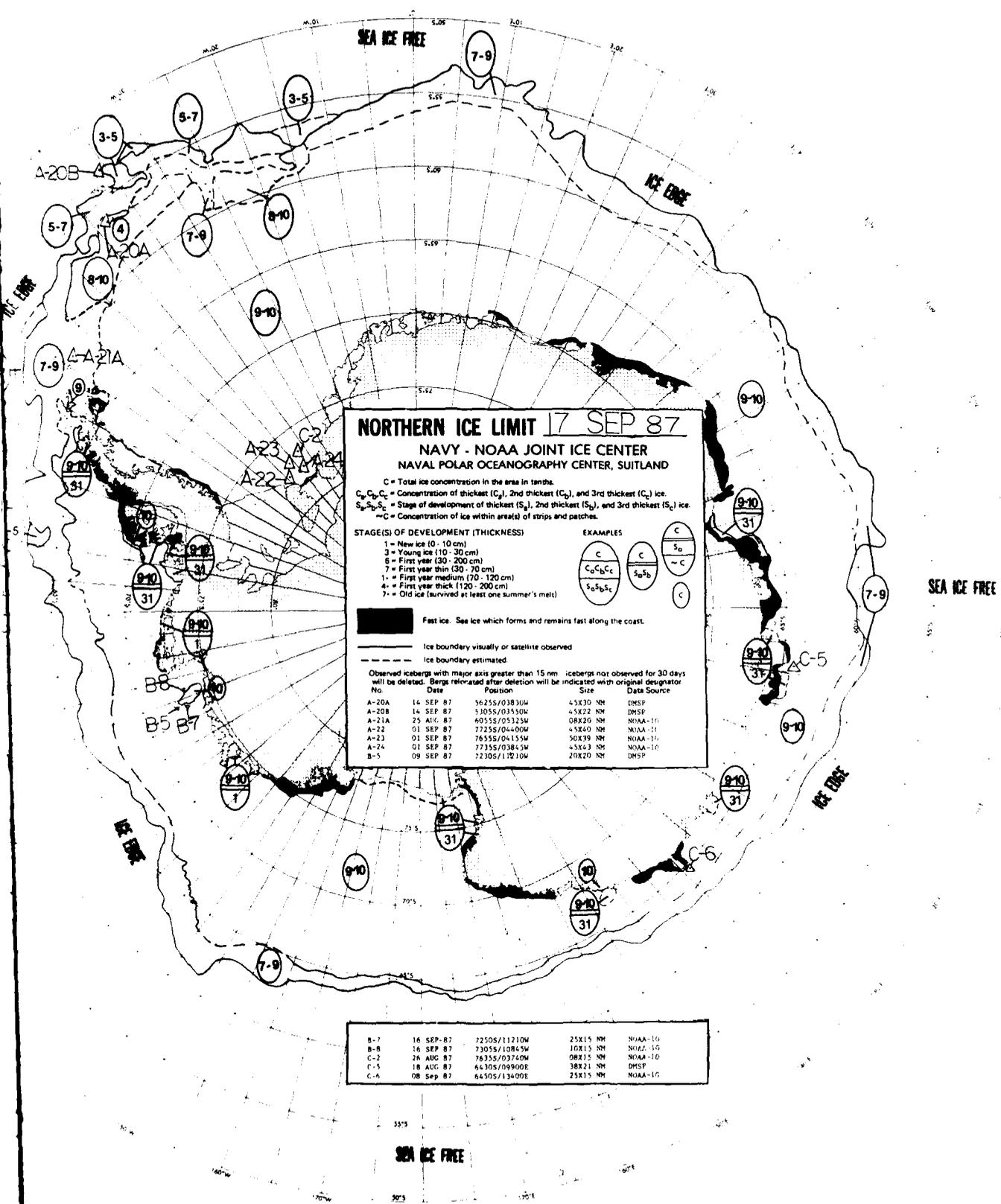
Fast ice. Sea ice which forms and remains fast along the coast

Ice boundary visually or satellite observed
 Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs reinstated after deletion will be indicated with original designator

No	Date	Position	Size	Data Source
A-20A	14 SEP 87	56255/03830W	4X30 NM	DMSP
A-20B	14 SEP 87	53055/03550W	4X22 NM	DMSP
A-21A	25 AUG 87	60555/05325W	08X20 NM	NPAA-11
A-22	01 SEP 87	72255/04405W	4X40 NM	NPAA-11
A-23	01 SEP 87	76555/04155W	50X39 NM	NPAA-11
A-24	01 SEP 87	72355/03845W	4X63 NM	NPAA-11
B-5	09 SEP 87	72305/11210W	20X20 NM	DMSP

B-7	16 SEP 87	72505/11210W	24X15 NM	NPAA-10
B-8	16 SEP 87	73055/10845W	108X15 NM	NPAA-10
C-2	26 AUG 87	76355/03240W	108X15 NM	NPAA-10
C-5	18 AUG 87	64305/09900E	30X21 NM	DMSP
C-6	08 Sep 87	64505/13400E	23X15 NM	NPAA-10



NORTHERN ICE LIMIT 17 SEP 87

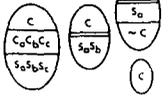
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year thin (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



Fast ice: Sea ice which forms and remains fast along the coast.

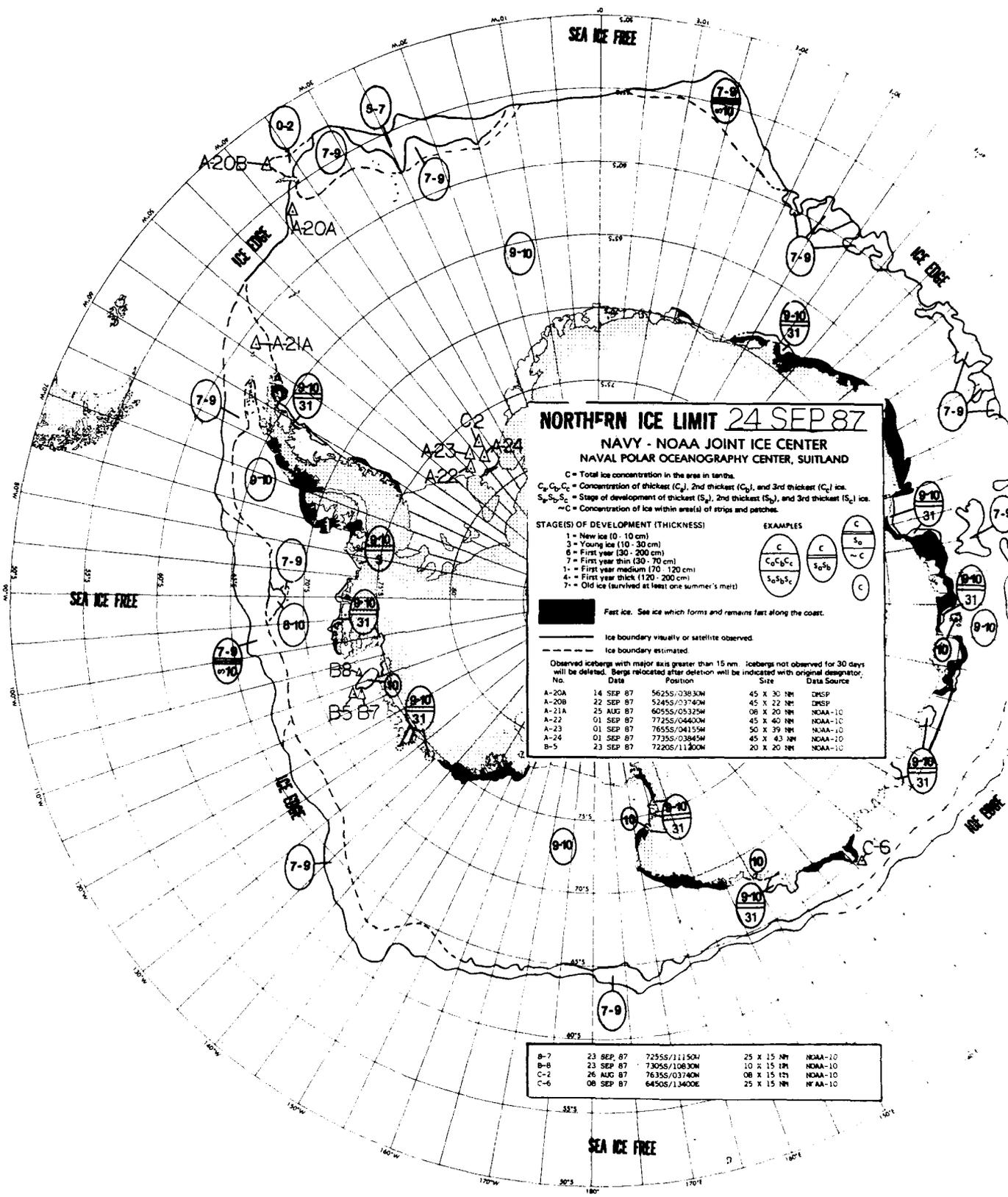
Ice boundary visually or satellite observed

Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge re-observed after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	14 SEP 87	5625S/03830W	45X30 NM	DMSP
A-20B	14 SEP 87	5305S/03550W	45X22 NM	DMSP
A-21A	25 AUG 87	6055S/05325W	08X20 NM	NOAA-10
A-22	01 SEP 87	7225S/04400W	45X40 NM	NOAA-11
A-23	01 SEP 87	7655S/04155W	50X39 NM	NOAA-10
A-24	01 SEP 87	7335S/03835W	45X43 NM	NOAA-10
B-5	09 SEP 87	2230S/11010W	40X20 NM	DMSP

B-7	16 SEP 87	7250S/11210W	25X15 NM	NOAA-10
B-8	16 SEP 87	7305S/10865W	10X15 NM	NOAA-10
C-2	26 AUG 87	7635S/03740W	08X15 NM	NOAA-10
C-5	18 AUG 87	6630S/09900E	38X21 NM	DMSP
C-6	08 Sep 87	6450S/13400E	25X15 NM	NOAA-10



NORTHERN ICE LIMIT 24 SEP 87

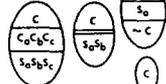
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



Fast ice. See ice which forms and remains fast along the coast.

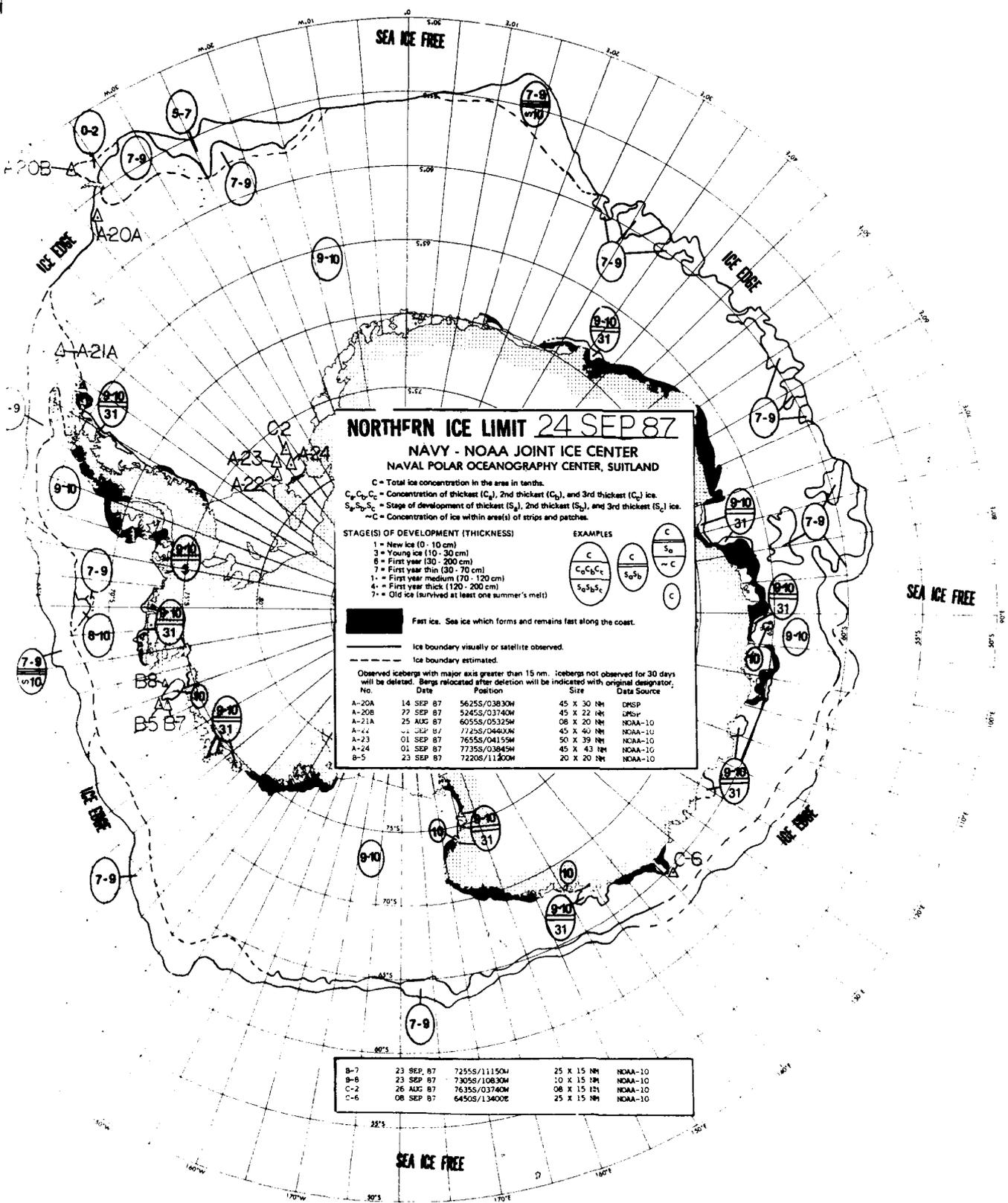
Ice boundary visually or satellite observed.

Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	14 SEP 87	5625S/03830W	45 X 30 NM	DMSP
A-20B	22 SEP 87	5245S/03740W	45 X 22 NM	DMSP
A-21A	25 AUG 87	6055S/05325W	08 X 20 NM	NOAA-10
A-22	01 SEP 87	7725S/04400W	45 X 40 NM	NOAA-10
A-23	01 SEP 87	7655S/04150W	50 X 39 NM	NOAA-10
A-24	01 SEP 87	7735S/03845W	45 X 43 NM	NOAA-10
B-5	23 SEP 87	7220S/11300W	20 X 20 NM	NOAA-10

B-7	23 SEP 87	7255S/11150W	25 X 15 NM	NOAA-10
B-8	23 SEP 87	7305S/10830W	10 X 15 NM	NOAA-10
C-2	26 AUG 87	7635S/03740W	08 X 15 NM	NOAA-10
C-6	08 SEP 87	6450S/13400E	25 X 15 NM	NOAA-10



NORTHERN ICE LIMIT 24 SEP 87

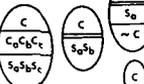
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year thin (30 - 70 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

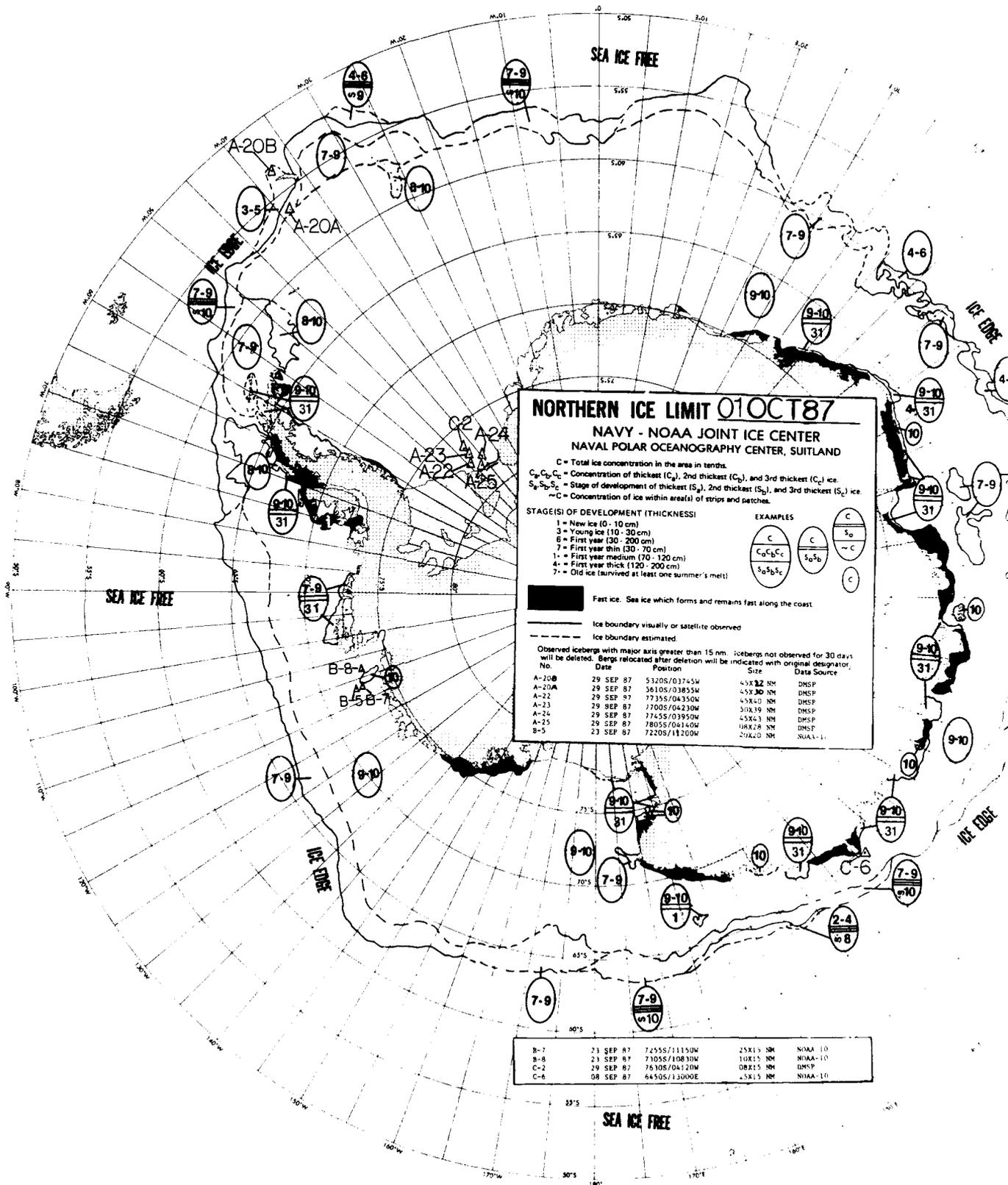


- Fast ice. See ice which forms and remains fast along the coast.
- Ice boundary visually or satellite observed.
- Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	14 SEP 87	5625S/03830W	45 X 30 NM	DMSP
A-20B	27 SEP 87	5245S/03740W	45 X 22 NM	DMSP
A-21A	25 AUG 87	6055S/05325W	08 X 20 NM	NOAA-10
A-22	01 SEP 87	7225S/04000E	45 X 40 NM	NOAA-10
A-23	01 SEP 87	7655S/04155W	50 X 39 NM	NOAA-10
A-24	01 SEP 87	7735S/03845W	45 X 43 NM	NOAA-10
B-5	23 SEP 87	7220S/11300W	20 X 20 NM	NOAA-10

B-7	23 SEP 87	7255S/11150W	25 X 15 NM	NOAA-10
B-8	23 SEP 87	7305S/10830W	10 X 15 NM	NOAA-10
C-2	26 AUG 87	7635S/03740W	08 X 15 NM	NOAA-10
C-6	08 SEP 87	6450S/13400E	25 X 15 NM	NOAA-10



NORTHERN ICE LIMIT 01 OCT 87

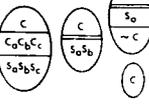
NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

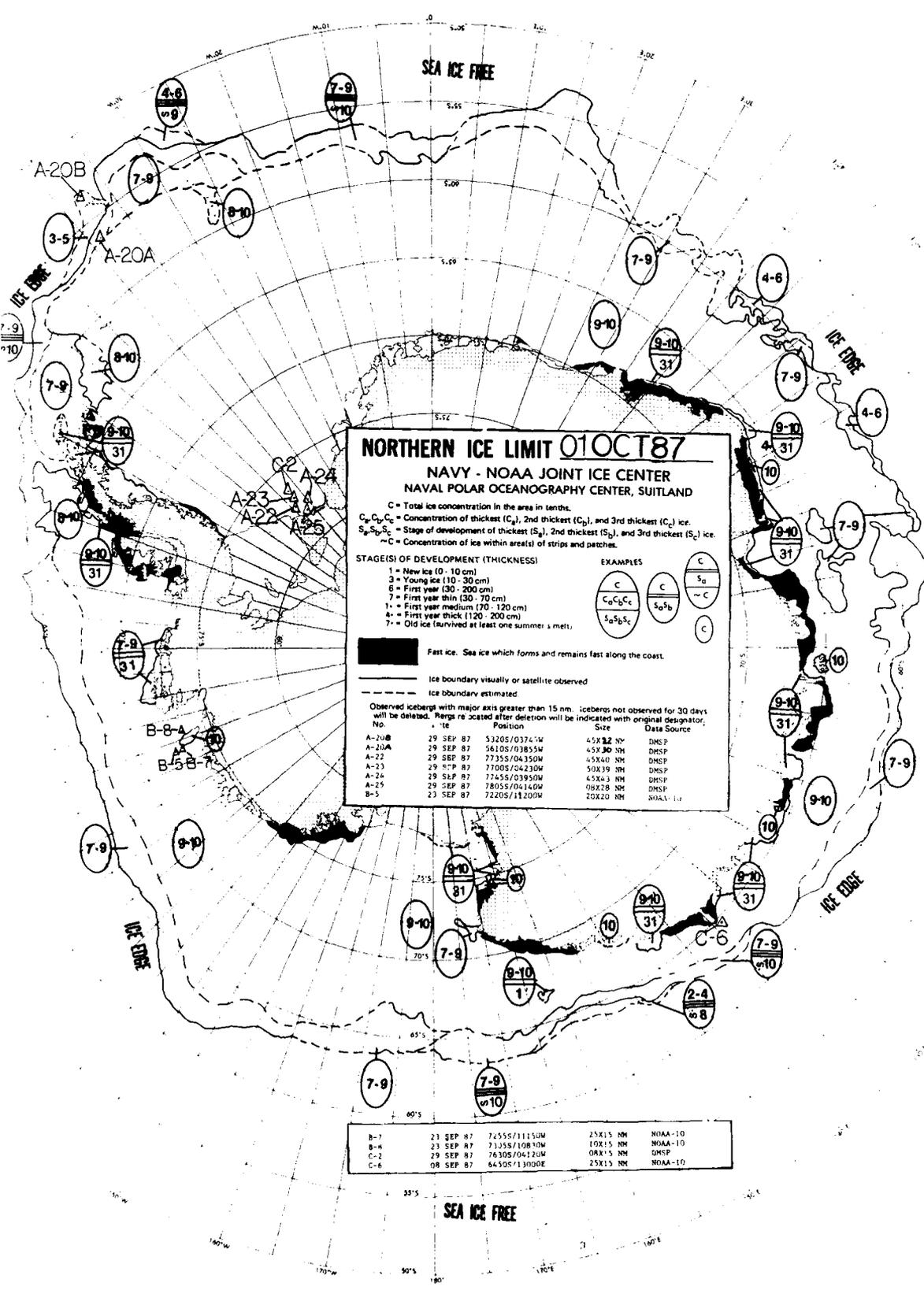


- Fast ice. Sea ice which forms and remains fast along the coast.
- Ice boundary visually or satellite observed.
- Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20B	29 SEP 87	5320S/03745W	45X12 NM	DMSP
A-20A	29 SEP 87	3610S/03855W	45X30 NM	DMSP
A-22	29 SEP 87	7735S/04230W	45X40 NM	DMSP
A-23	29 SEP 87	7700S/04230W	30X19 NM	DMSP
A-24	29 SEP 87	7745S/03950W	45X13 NM	DMSP
A-25	29 SEP 87	7805S/04140W	48X28 NM	DMSP
B-5	23 SEP 87	7200S/11200W	20X20 NM	NOAA-1

B-7	23 SEP 87	7255S/11150W	25X13 NM	NOAA-10
B-8	23 SEP 87	7105S/10810W	10X15 NM	NOAA-10
C-2	29 SEP 87	7630S/04120W	08X15 NM	DMSP
C-6	08 SEP 87	6450S/11300E	45X15 NM	NOAA-10



NORTHERN ICE LIMIT 01 OCT 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (50 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$	$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{S_1}$	$\frac{C}{C}$
$\frac{S_1 S_2 S_3}{C}$	$\frac{S_1 S_2}{C}$	$\frac{S_1}{C}$	$\frac{C}{C}$

Fast ice. Sea ice which forms and remains fast along the coast.

— Ice boundary visually or satellite observed
 - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs re-ocated after deletion will be indicated with original designator.

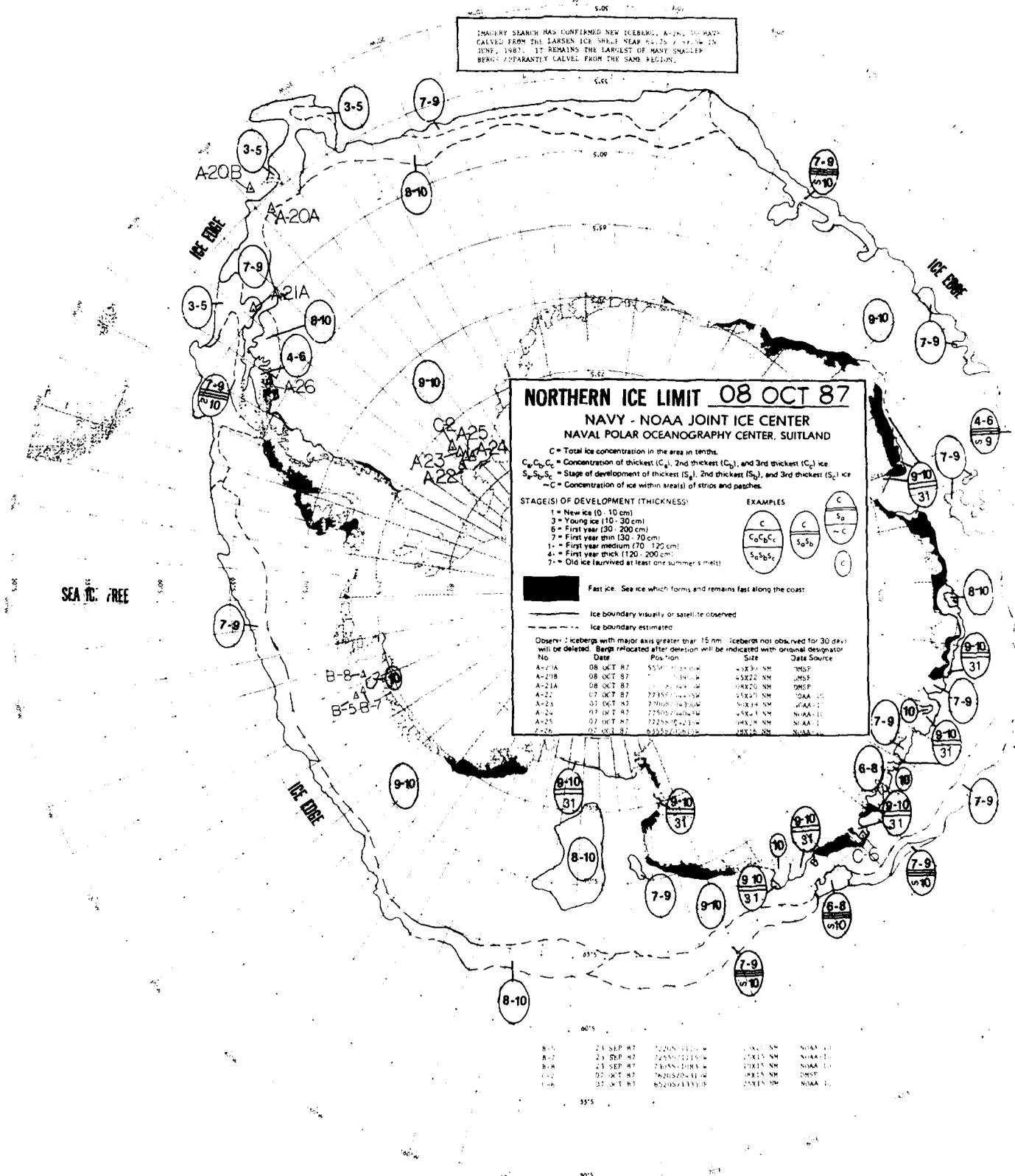
No.	Date	Position	Size	Data Source
A-20B	29 SEP 87	5320S/0374W	45X32 NM	DMSP
A-20A	29 SEP 87	5410S/0385W	45X30 NM	DMSP
A-22	29 SEP 87	7735S/0435W	45X40 NM	DMSP
A-23	29 SEP 87	7700S/0423W	50X39 NM	DMSP
A-24	29 SEP 87	7745S/0395W	45X43 NM	DMSP
A-25	29 SEP 87	7805S/0414W	60X28 NM	DMSP
B-5	23 SEP 87	7220S/1120W	20X20 NM	NOAA-10

B-7	21 SEP 87	7255S/1115W	25X15 NM	NOAA-10
B-8	23 SEP 87	7325S/1081W	10X15 NM	NOAA-10
C-2	29 SEP 87	7630S/0412W	08X15 NM	DMSP
C-6	08 SEP 87	6430S/1300E	25X13 NM	NOAA-10

SEA ICE FREE

SEA ICE FREE

IMAGERY SEARCH HAS CONFIRMED NEW ICEBERG, A-21, TO HAVE CALVEED FROM THE LARSEN ICE SHELF NEAR 62°25'N 149°14'W IN JUNE, 1987. IT REMAINS THE LARGEST OF MANY SMALLER BERGS APPARENTLY CALVEED FROM THE SAME REGION.



NORTHERN ICE LIMIT 08 OCT 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
C₁C₂C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
S₁S₂S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
-C = Concentration of ice within areas of strips and patches.

- STAGES OF DEVELOPMENT (THICKNESS):
- 1 = New ice (0 - 10 cm)
 - 2 = Young ice (10 - 30 cm)
 - 3 = First year thin (30 - 200 cm)
 - 4 = First year thin (30 - 70 cm)
 - 5 = First year medium (70 - 120 cm)
 - 6 = First year thick (120 - 200 cm)
 - 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{S_1}$	$\frac{C}{S_2}$	$\frac{C}{S_3}$
$\frac{C_1 C_2 C_3}{S_1 S_2 S_3}$	$\frac{C}{S_1 S_2}$	$\frac{C}{S_1 S_2 S_3}$

Fast ice: Sea ice which forms and remains fast along the coast.
Ice boundary visually or satellite observed.
Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs indicated after deletion will be indicated with original designator.

No.	Date	Position	Size	Date Source
A-7/A	08 OCT 87	55°07'N 121°04'W	43X30 NM	DMSP
A-21B	08 OCT 87	55°07'N 121°04'W	45X22 NM	DMSP
A-21A	08 OCT 87	55°07'N 121°04'W	10X20 NM	DMSP
A-23	07 OCT 87	72°55'N 121°15'W	45X27 NM	DMSP
A-25	07 OCT 87	72°55'N 121°15'W	45X24 NM	DMSP
A-24	07 OCT 87	72°55'N 121°15'W	45X24 NM	DMSP
A-25	07 OCT 87	72°55'N 121°15'W	45X24 NM	DMSP
A-25	07 OCT 87	72°55'N 121°15'W	45X24 NM	DMSP

B-5	23 SEP 87	72°05'N 111°00'W	15X11 NM	NOAA-11
B-7	23 SEP 87	72°55'N 121°15'W	15X15 NM	NOAA-11
B-8	23 SEP 87	72°55'N 121°15'W	10X15 NM	NOAA-11
B-6	07 OCT 87	74°05'N 141°15'W	10X15 NM	DMSP
B-4	07 OCT 87	65°20'N 133°00'W	15X15 NM	NOAA-11

INADEQUATE SEARCH HAS CONFIRMED NEW ICEBERG, A-26, TO HAVE CALVED FROM THE LARSEN ICE SHELF NEAR 64-25 / 59.5W IN JUNE, 1987. IT REMAINS THE LARGEST OF MANY SMALLER BERGS APPARENTLY CALVED FROM THE SAME REGION.

NORTHERN ICE LIMIT 08 OCT 87

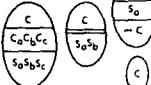
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 *C = Concentration of ice within areas of rotas and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

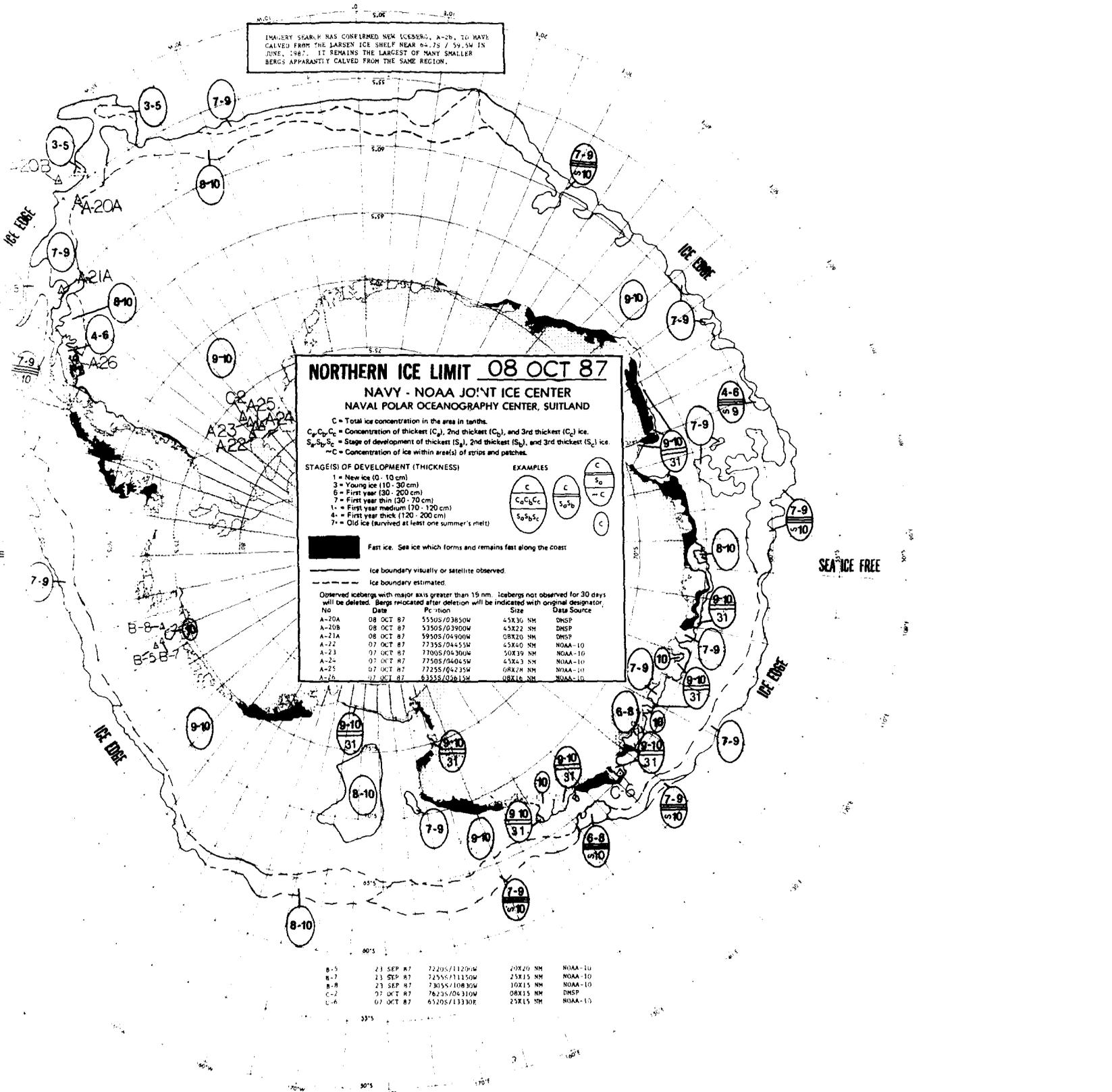


Fast ice: See ice which forms and remains fast along the coast
 --- Ice boundary virtually or satellite observed.
 - - - - - Ice boundary estimated.

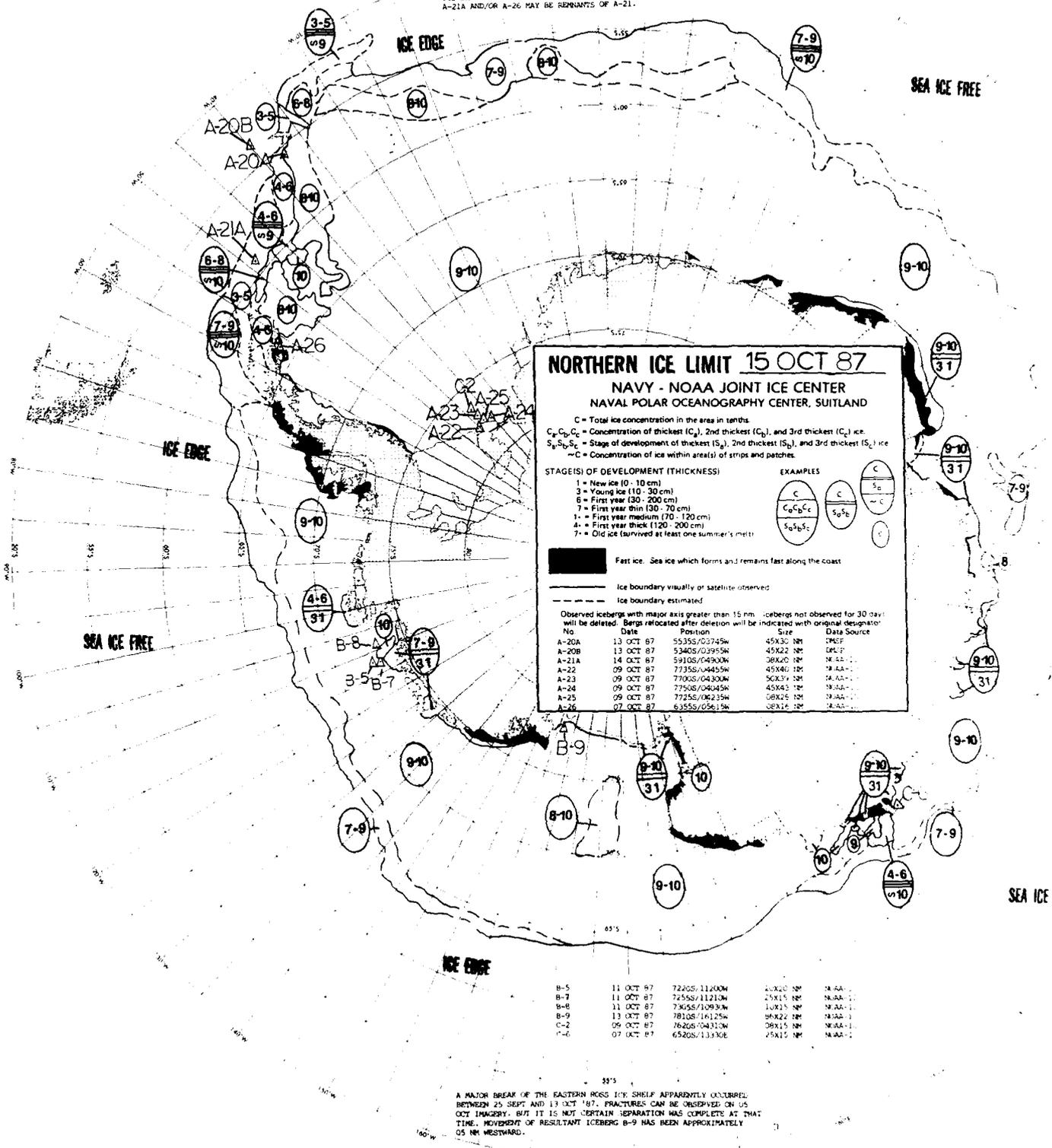
Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs reobserved after deletion will be indicated with original designator.

No	Date	Position	Size	Data Source
A-20A	08 OCT 87	5550S/03850W	45X30 NM	DHSP
A-20B	08 OCT 87	5350S/03900W	45X22 NM	DHSP
A-21A	08 OCT 87	5905S/04900W	08X20 NM	DHSP
A-22	07 OCT 87	7735S/04455W	45X40 NM	NOAA-10
A-23	07 OCT 87	7700S/04300W	50X30 NM	NOAA-10
A-24	07 OCT 87	7750S/04045W	45X43 NM	NOAA-10
A-25	07 OCT 87	7235S/04235W	08X20 NM	NOAA-10
A-26	07 OCT 87	6355S/02815W	08X16 NM	NOAA-10

B-5	23 SEP 87	7220S/1120W	20X20 NM	NOAA-10
B-7	13 SEP 87	7255S/11150W	25X15 NM	NOAA-10
B-8	23 SEP 87	7305S/10850W	10X15 NM	NOAA-10
C-2	07 OCT 87	7625S/04310W	08X15 NM	DHSP
C-6	07 OCT 87	6520S/13330E	25X15 NM	NOAA-13



AFTER FURTHER IMAGERY SEARCH, NOW CONSIDER ORIGIN OF ICEBERGS A-21A AND A-26 AS UNCERTAIN. A-21: A 22K'S NW ICEBERG CALVED FROM THE LARGEST ICE SHELF JULY '86 AND WAS LAST OBSERVED AT 6645S/05913W 16 DEC '87. A-21A AND/OR A-26 MAY BE REMNANTS OF A-21.



NORTHERN ICE LIMIT 15 OCT 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within areas of strips and patches.

STAGES (S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year (30 - 70 cm)
- 4 = First year thin (30 - 70 cm)
- 5 = First year medium (70 - 120 cm)
- 6 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$	$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{S_1 S_2 S_3}$
$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{S_1 S_2 S_3}$

Fast ice: Sea ice which forms and remains fast along the coast

Ice boundary visually or satellite observed

Ice boundary estimated

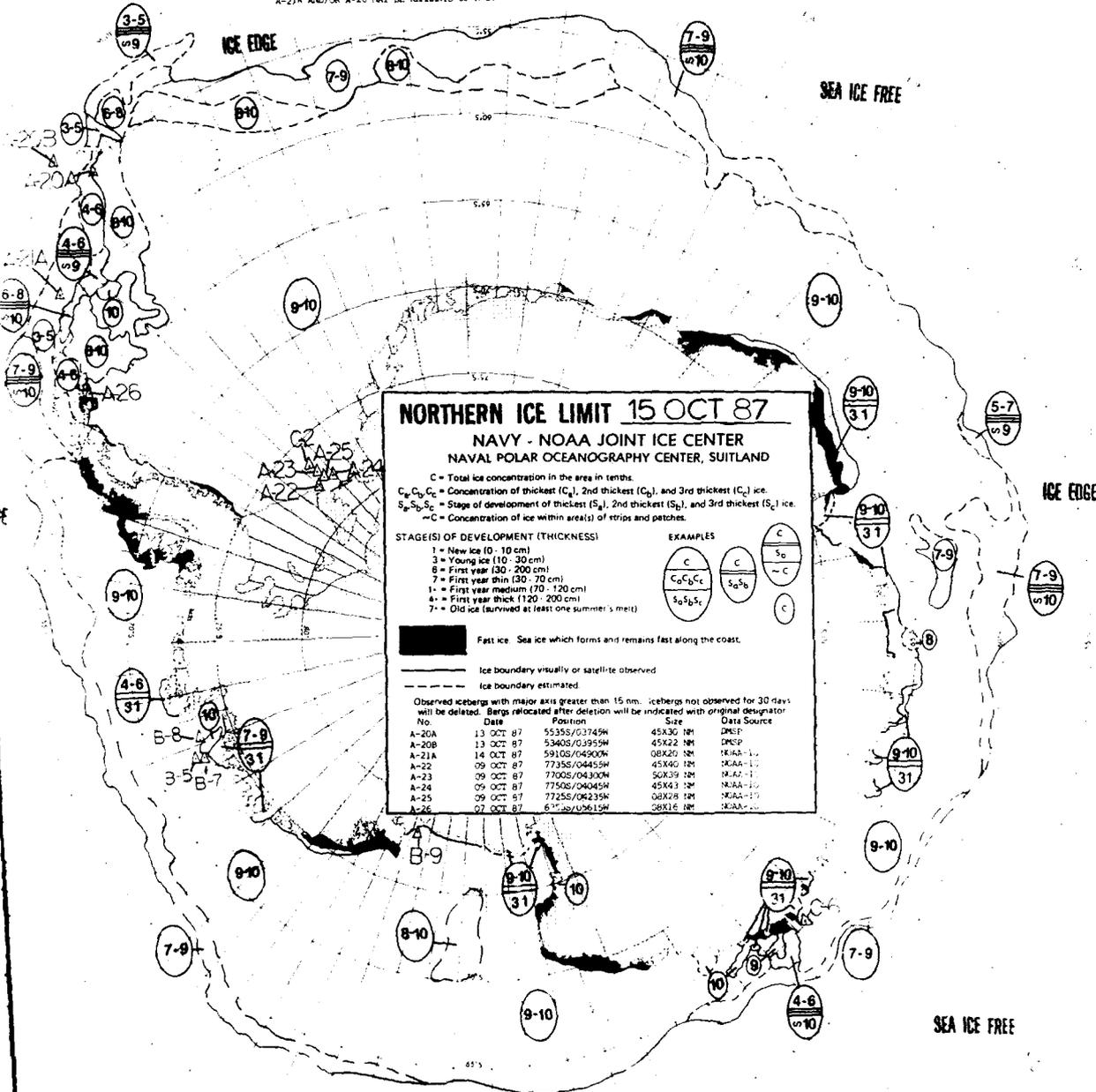
Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bars relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	13 OCT 87	5535S/03745W	45X30 NM	IMSF
A-20B	13 OCT 87	5340S/03955W	45X22 NM	IMSF
A-21A	14 OCT 87	5910S/04900W	30X20 NM	NAO
A-22	09 OCT 87	7735S/04455W	45X40 NM	NAO
A-23	09 OCT 87	7700S/04300W	50X30 NM	NAO
A-24	09 OCT 87	7750S/04045W	45X45 NM	NAO
A-25	09 OCT 87	7725S/06235W	30X25 NM	NAO
A-26	07 OCT 87	6355S/05615W	30X16 NM	NAO

B-5	11 OCT 87	7220S/11200W	20X20 NM	NAO
B-7	11 OCT 87	7255S/11210W	25X15 NM	NAO
B-8	11 OCT 87	7305S/10930W	10X15 NM	NAO
B-9	13 OCT 87	7810S/16125W	30X22 NM	NAO
C-2	09 OCT 87	4920S/04130W	20X15 NM	NAO
C-6	07 OCT 87	6520S/1330E	25X15 NM	NAO

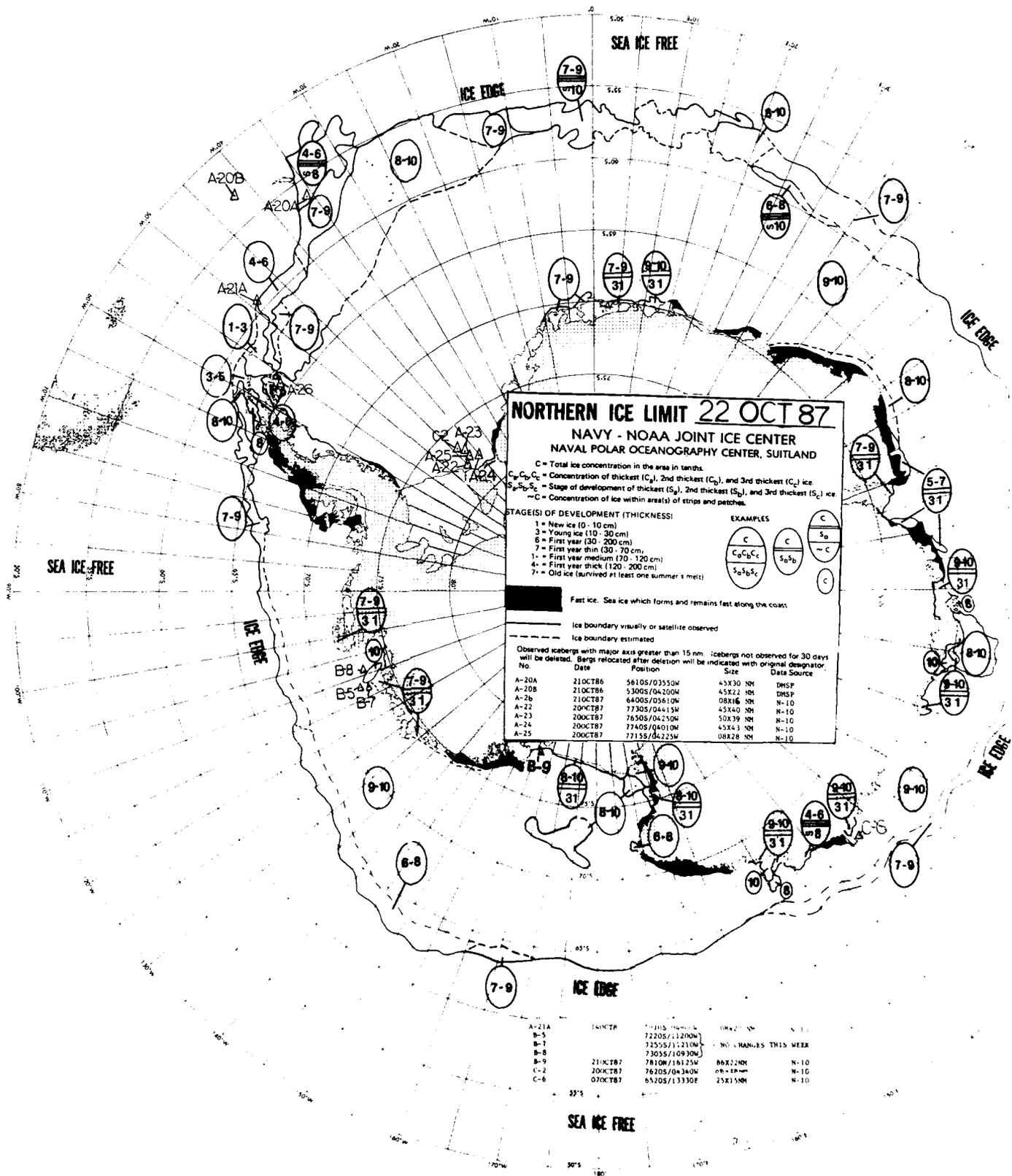
A MAJOR BREAK OF THE EASTERN ROSS ICE SHELF APPARENTLY OCCURRED BETWEEN 25 SEPT AND 13 OCT '87. FRACTURES CAN BE OBSERVED ON US OCT IMAGERY, BUT IT IS NOT CERTAIN SEPARATION WAS COMPLETE AT THAT TIME. MOVEMENT OF RESULTANT ICEBERG B-9 HAS BEEN APPROXIMATELY 05 NM WESTWARD.

AFTER FURTHER IMAGERY SEARCH, NOW CONSIDER ORIGIN OF ICEBERGS A-21A AND A-26 AS UNCERTAIN. A-21, A 22X29 NM ICEBERG CALLED FROM THE LARGEST ICE SHELF JULY '86 AND WAS LAST OBSERVED AT 66455/050154 10 DEC '87. A-21A AND/OR A-26 MAY BE REMNANTS OF A-21.



B-5	11 OCT 87	72205/11200W	20X20 NM	N-AAA-10
B-7	11 OCT 87	72555/11210W	25X15 NM	N-AAA-10
B-8	11 OCT 87	73055/10930W	10X15 NM	N-AAA-10
B-9	11 OCT 87	78105/16125W	06X22 NM	N-AAA-10
C-2	09 OCT 87	76205/04310W	28X15 NM	N-AAA-10
C-6	17 OCT 87	65205/13330E	25X15 NM	N-AAA-10

A MAJOR BREAK OF THE EASTERN PACIFIC ICE SHELF APPARENTLY OCCURRED BETWEEN 25 SEPT AND 13 OCT '87. FRACTURES CAN BE OBSERVED IN 25 OCT IMAGERY, BUT IT IS NOT CERTAIN SEPARATION WAS COMPLETE AT THAT TIME. MOVEMENT OF RESULTANT ICEBERG B-9 HAS BEEN APPROXIMATELY 05 NM WESTWARD.



NORTHERN ICE LIMIT 22 OCT 87

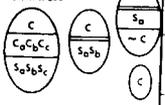
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
-C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS):

- 1 = New ice (10 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year thin (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year thin (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



Fast ice: Sea ice which forms and remains fast along the coast.

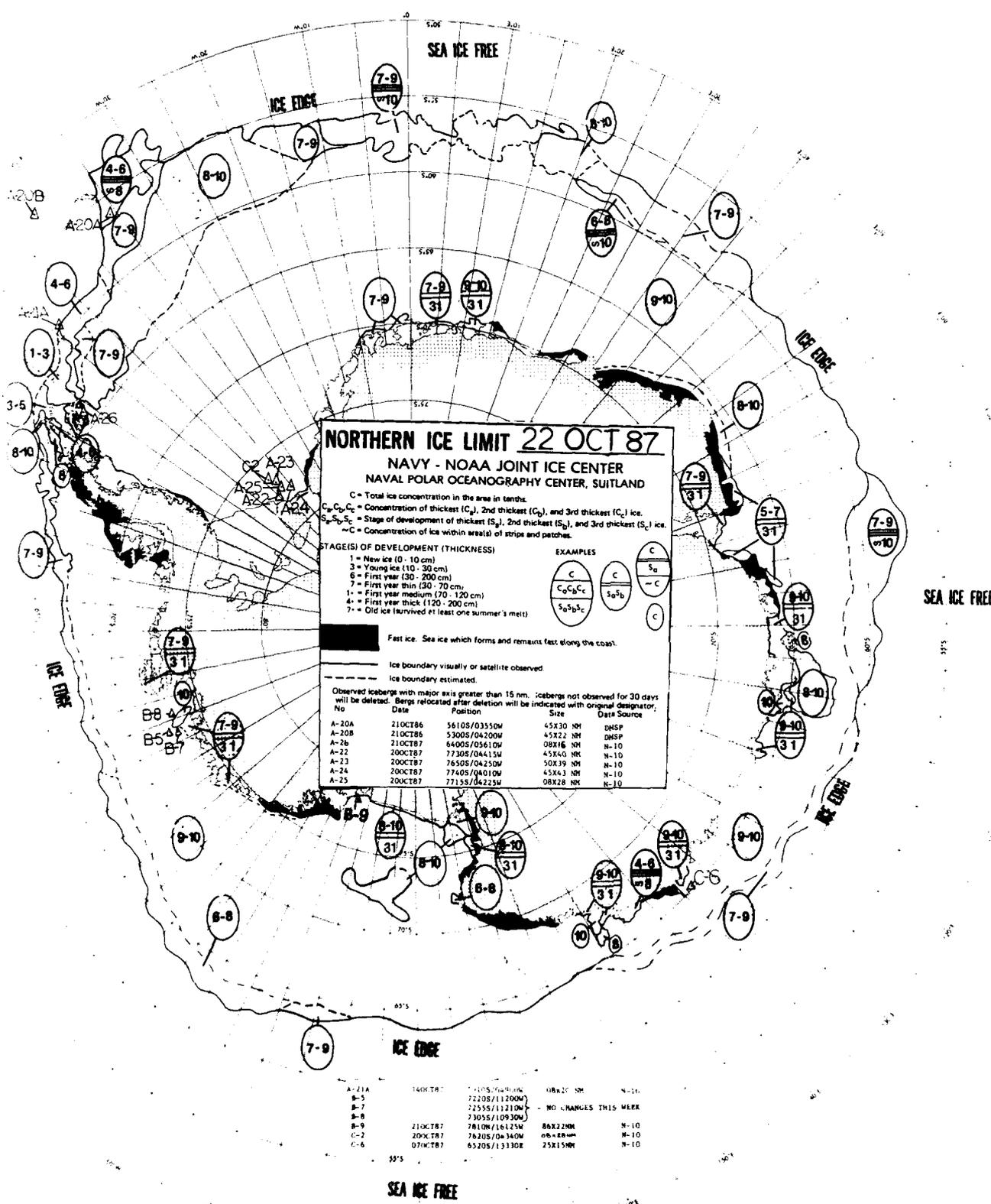
Ice boundary visually or satellite observed

Ice boundary estimated

Observed icebergs with major axis greater than 15 m. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	21OCT86	5610S/03550W	45X30 NM	DMSP
A-20B	21OCT86	5300S/04200W	45X22 NM	DMSP
A-26	21OCT87	6400S/03610W	08X16 NM	N-10
A-22	20OCT87	7730S/04415W	45X40 NM	N-10
A-23	20OCT87	7650S/04250W	50X39 NM	N-10
A-24	20OCT87	7740S/04010W	45X43 NM	N-10
A-25	20OCT87	7715S/04225W	08X28 NM	N-10

Iceberg No.	Date	Position	Size	Data Source
A-21A	21OCT87	7220S/11200W	NO CHANGE THIS WEEK	
B-5	22OCT87	7255S/11210W	NO CHANGE THIS WEEK	
B-7	23OCT87	7305S/10930W	NO CHANGE THIS WEEK	
B-8	21OCT87	7810W/18125W	86X22 NM	N-10
B-9	20OCT87	7620S/08340W	08 X 16 NM	N-10
C-2	07OCT87	6520S/13330E	25X15 NM	N-10



NORTHERN ICE LIMIT 22 OCT 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
-C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS) EXAMPLES

1 = New ice (0 - 10 cm) C
3 = Young ice (10 - 30 cm) S₁
6 = First year thin (30 - 70 cm) C
7 = First year thin (30 - 70 cm) C
A-22 200CT87 77305/04415M 45X40 NM N-10
A-23 200CT87 76505/04230M 50X39 NM N-10
A-24 200CT87 77405/04010M 45X43 NM N-10
A-25 200CT87 77155/04225M 08X28 NM N-10

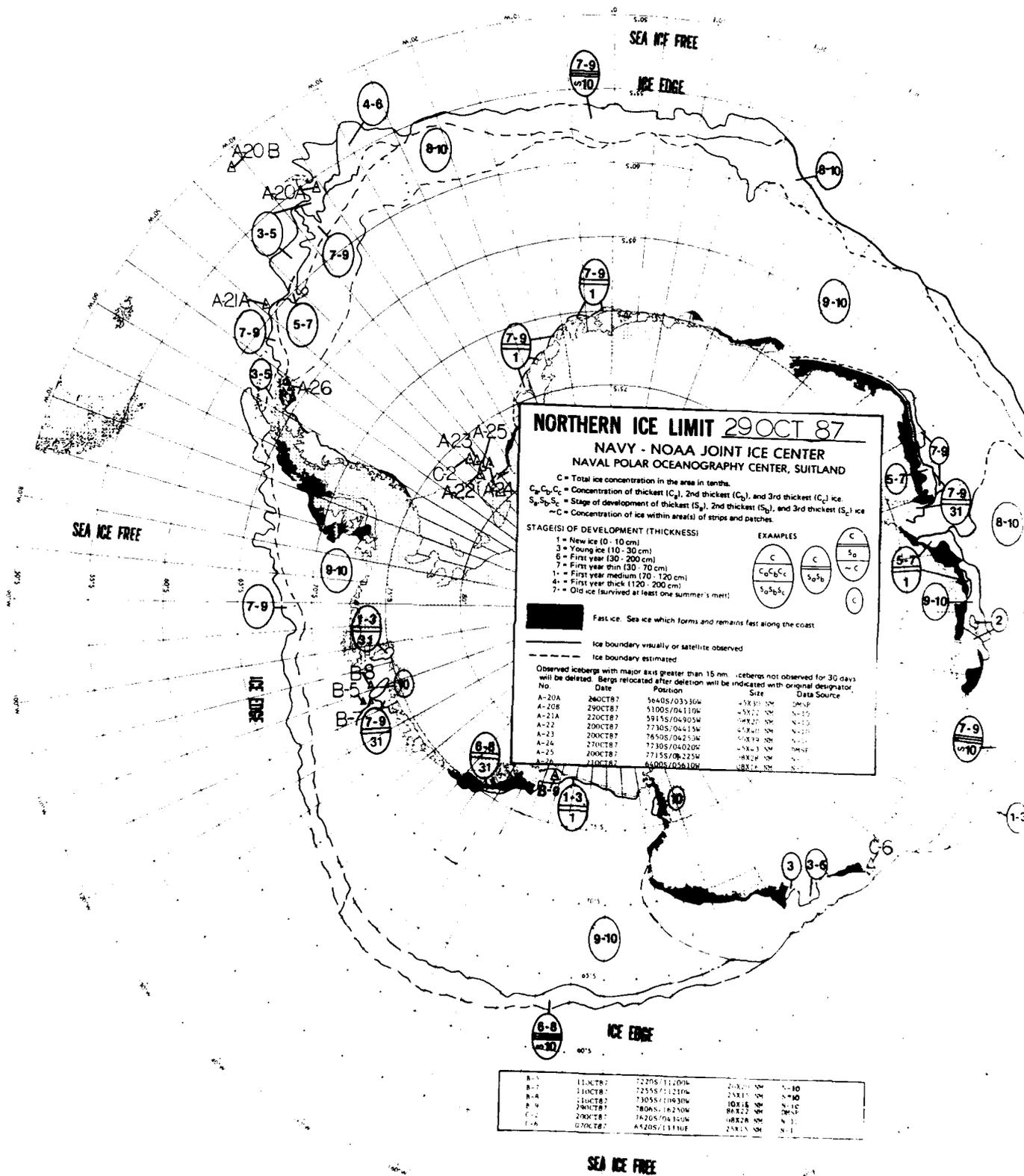
Fast ice: Sea ice which forms and remains fast along the coast.
Ice boundary visually or satellite observed
Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No	Date	Position	Size	Date	Source
A-20A	21OCT86	56105/03550M	45X30	NM	DNSP
A-20B	21OCT86	53005/04200M	45X22	NM	DNSP
A-26	21OCT87	64005/03610M	08X16	NM	N-10
A-22	20OCT87	77305/04415M	45X40	NM	N-10
A-23	20OCT87	76505/04230M	50X39	NM	N-10
A-24	20OCT87	77405/04010M	45X43	NM	N-10
A-25	20OCT87	77155/04225M	08X28	NM	N-10

A-21A	14OCT87	72205/11200M	08X20	NM	N-10
B-5		72205/11200M			
B-7		72555/11210M			
B-8		73055/10930M			
B-9	21OCT87	7810M/18125M	06X22	NM	N-10
C-2	20OCT87	76205/04340M	06X28	NM	N-10
C-6	07OCT87	65205/13330E	25X15	NM	N-10

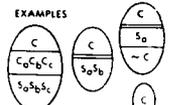
SEA ICE FREE



NORTHERN ICE LIMIT 29 OCT 87
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
 C = Concentration of ice within areas of strips and patches.

- STAGES OF DEVELOPMENT (THICKNESS)**
- 1 = New ice (10 - 10 cm)
 - 2 = Young ice (10 - 30 cm)
 - 3 = First year (30 - 200 cm)
 - 4 = First year thin (30 - 70 cm)
 - 5 = First year medium (70 - 120 cm)
 - 6 = First year thick (120 - 200 cm)
 - 7 = Old ice (survived at least one summer's melt)



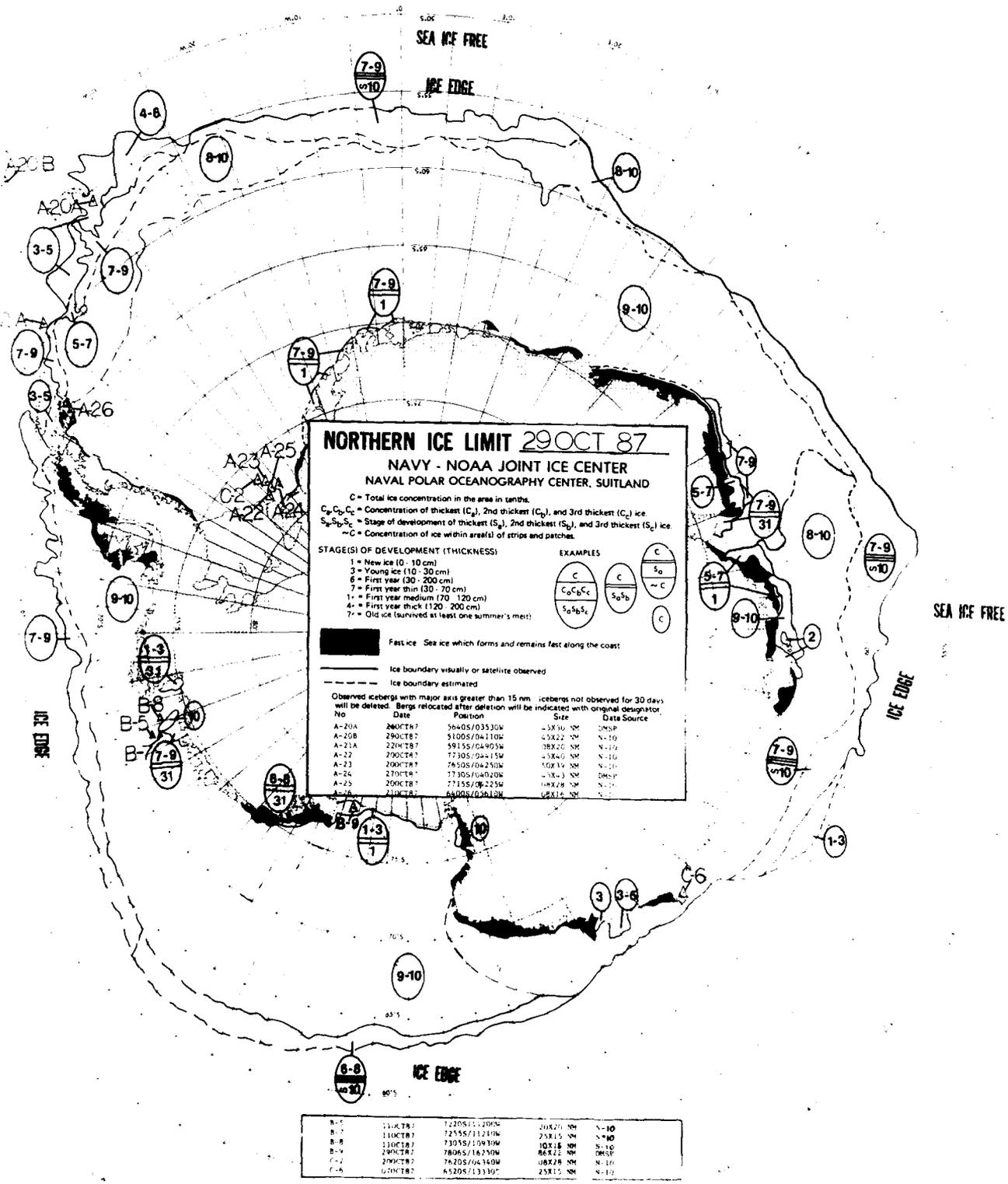
Fast ice: Sea ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed
 Ice boundary estimated

Observed icebergs with major axis greater than 15 nm... icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Site	Data Source
A-20A	24OCT87	5640S/03330W	18X11 NW	DMSP
A-20B	29OCT87	5100S/04110W	45X12 NW	N-10
A-21A	22OCT87	5915S/04905W	04X27 NW	N-10
A-22	20OCT87	7730S/04415W	07X20 NW	N-10
A-23	20OCT87	7450S/04250W	07X19 NW	DMSP
A-24	27OCT87	7730S/04020W	08X24 NW	N-10
A-25	20OCT87	7715S/06225W	08X24 NW	N-10
A-26	11OCT87	6000S/03610W	08X17 NW	N-10

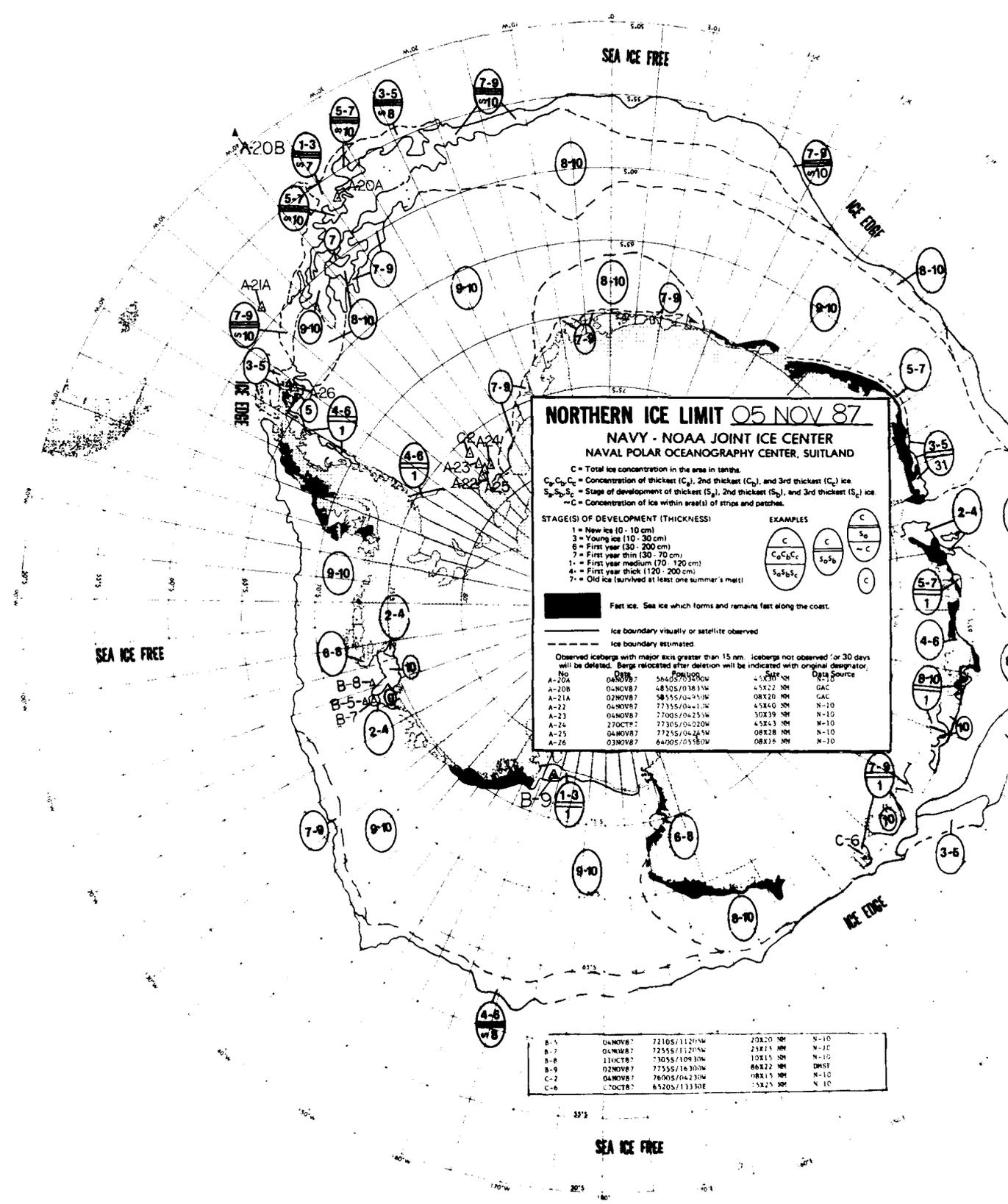
B-1	11OCT87	7220S/11120W	24X11 NW	N-10
B-7	11OCT87	7255S/11210W	24X11 NW	N-10
B-8	11OCT87	7305S/11030W	10X16 NW	N-10
B-9	29OCT87	7805S/10250W	08X22 NW	DMSP
C-2	29OCT87	1820S/04150W	08X24 NW	N-10
T-6	07OCT87	6520S/11410W	25X15 NW	N-10

SEA ICE FREE



B-5	11OCT87	7220S/11290W	20X20 NM	N-10
B-7	11OCT87	7255S/11210W	25X15 NM	N-10
B-8	11OCT87	7305S/10930W	10X18 NM	N-10
B-9	29OCT87	7806S/16250W	86X22 NM	DMSP
C-2	29OCT87	7620S/04340W	18X28 NM	N-10
C-6	07OCT87	6520S/13330E	25X12 NM	N-10

SEA ICE FREE



NORTHERN ICE LIMIT 05 NOV 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C₁C₂C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
 S₁S₂S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
 -C = Concentration of ice within area(s) of strips and patches.

- STAGE(S) OF DEVELOPMENT (THICKNESS) EXAMPLES
- 1 = New ice (0 - 10 cm)
 - 3 = Young ice (10 - 30 cm)
 - 6 = First year (30 - 200 cm)
 - 7 = First year thin (30 - 70 cm)
 - 1 = First year medium (70 - 120 cm)
 - 4 = First year thick (120 - 200 cm)
 - 7 = Old ice (survived at least one summer's melt)

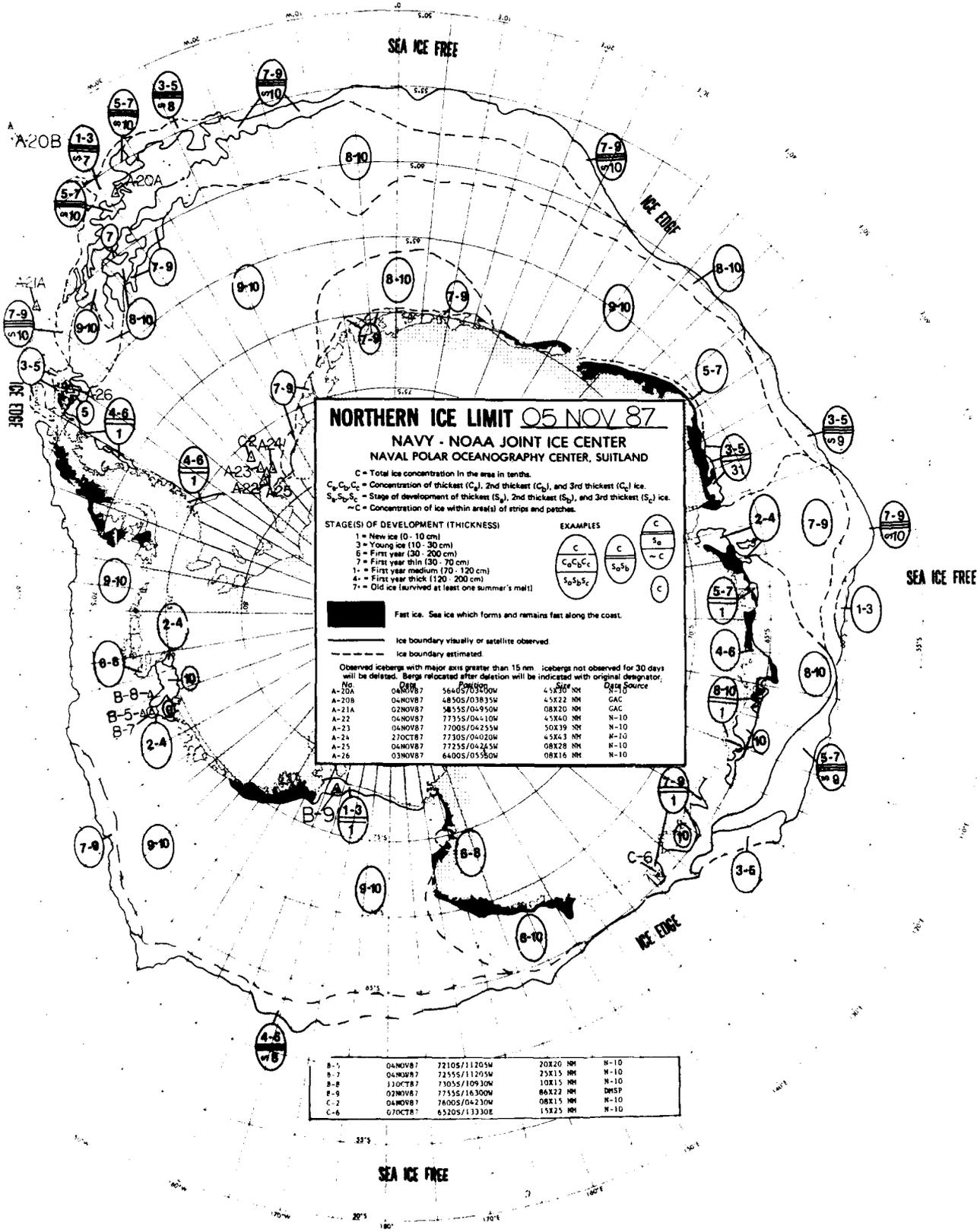
Fast ice: Sea ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed
 Ice boundary estimated

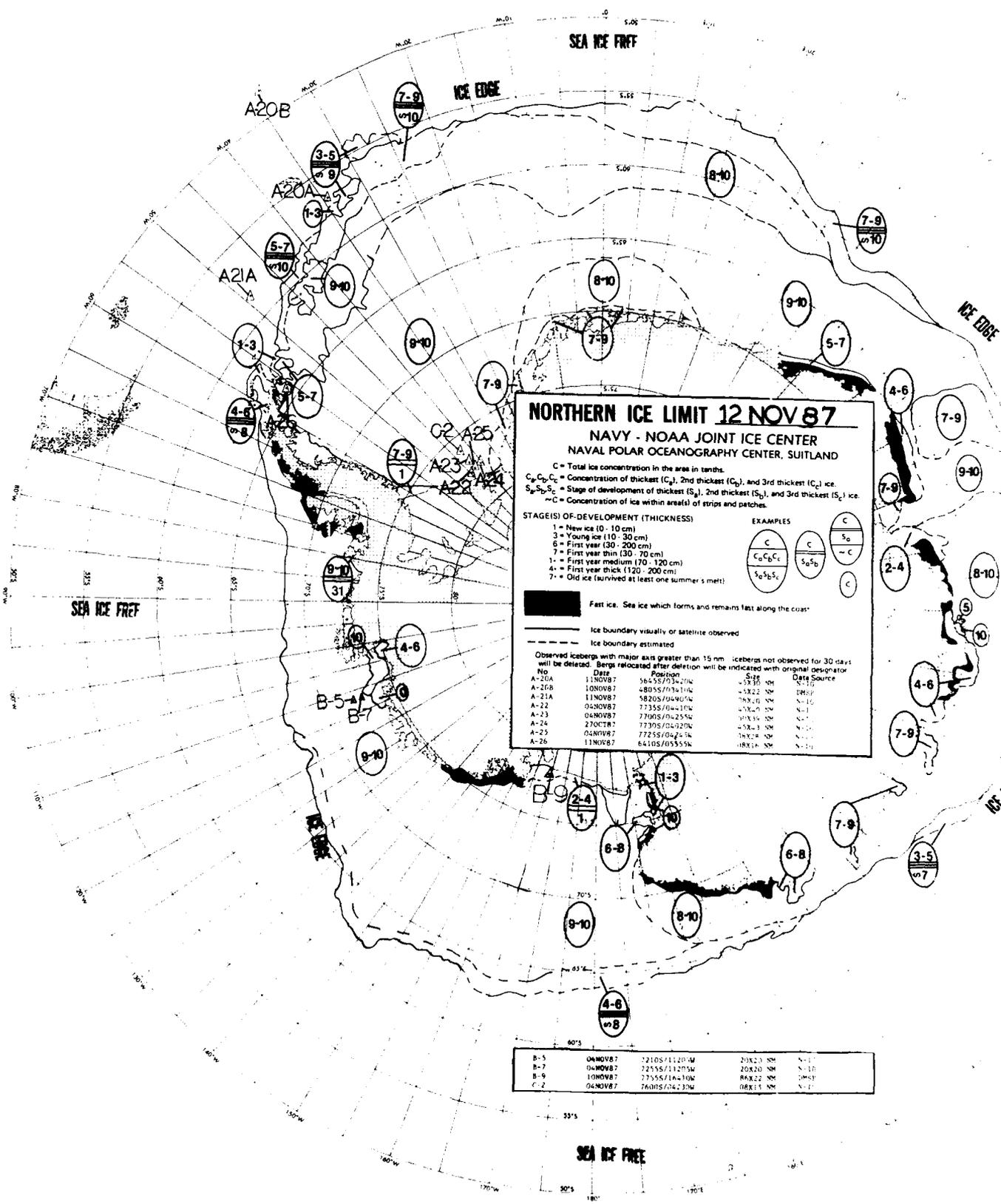
Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No	Date	Lat	Long	Height	Data Source
A-20A	04NOV87	5645N	7035W	4.53M	NOI
A-20B	04NOV87	4855N	108.35W	4.522	NOI
A-21A	02NOV87	5855N	104.51W	08X20	NOI
A-22	04NOV87	7735N	104.13W	4.5X40	NOI
A-23	04NOV87	7700N	104.25W	50X39	NOI
A-24	27OCT87	7730N	104.20W	4.5X45	NOI
A-25	04NOV87	7725N	104.25W	08X20	NOI
A-26	03NOV87	6405N	105.80W	08X16	NOI

B-5	04NOV87	7210N	112.01W	20X20	NOI
B-7	04NOV87	7255N	112.01W	23X19	NOI
B-8	11OCT87	7305N	109.30W	10X15	NOI
B-9	02NOV87	7755N	116.30W	86X22	DMSE
C-2	04NOV87	7605N	104.30W	08X15	NOI
C-6	17OCT87	6520N	113.30E	15X25	NOI

SEA ICE FREE





NORTHERN ICE LIMIT 12 NOV 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$	$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{S_1}$	$\frac{C}{S_2}$	$\frac{C}{S_3}$
$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{S_1}$	$\frac{C}{S_2}$	$\frac{C}{S_3}$	$\frac{C}{S_1}$

Fast ice. Sea ice which forms and remains fast along the coast.
 - - - - - Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designation.

No	Date	Position	Size	Data Source
A-20A	11NOV87	5645S/73427W	45X30 NM	N-10
A-20B	10NOV87	4805S/77341W	45X22 NM	DMSP
A-21A	11NOV87	5820S/04405W	76X16 NM	N-10
A-22	06NOV87	7735S/04410W	45X20 NM	N-11
A-23	04NOV87	7700S/04255W	45X16 NM	N-11
A-24	27OCT87	7730S/04202W	45X13 NM	N-11
A-25	04NOV87	7725S/04245W	45X18 NM	N-11
A-26	11NOV87	6410S/03555W	48X18 NM	N-10

B-5	04NOV87	7210S/11201W	20X23 NM	N-11
B-7	04NOV87	7255S/11205W	20X20 NM	N-10
B-9	10NOV87	7755S/16410W	84X22 NM	DMSP
C-2	04NOV87	7600S/04230W	08X13 NM	N-11

SEA ICE FREE

ICE EDGE

ICE EDGE

SEA ICE FREE

ICE EDGE

SEA ICE FREE

NORTHERN ICE LIMIT 12 NOV 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year (30 - 200 cm)
- 4 = First year thin (30 - 70 cm)
- 5 = First year medium (70 - 120 cm)
- 6 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

C	C	C
$\frac{C_1 C_2 C_3}{S_1 S_2 S_3}$	$\frac{C}{S_1 S_2}$	$\frac{C}{S_1}$

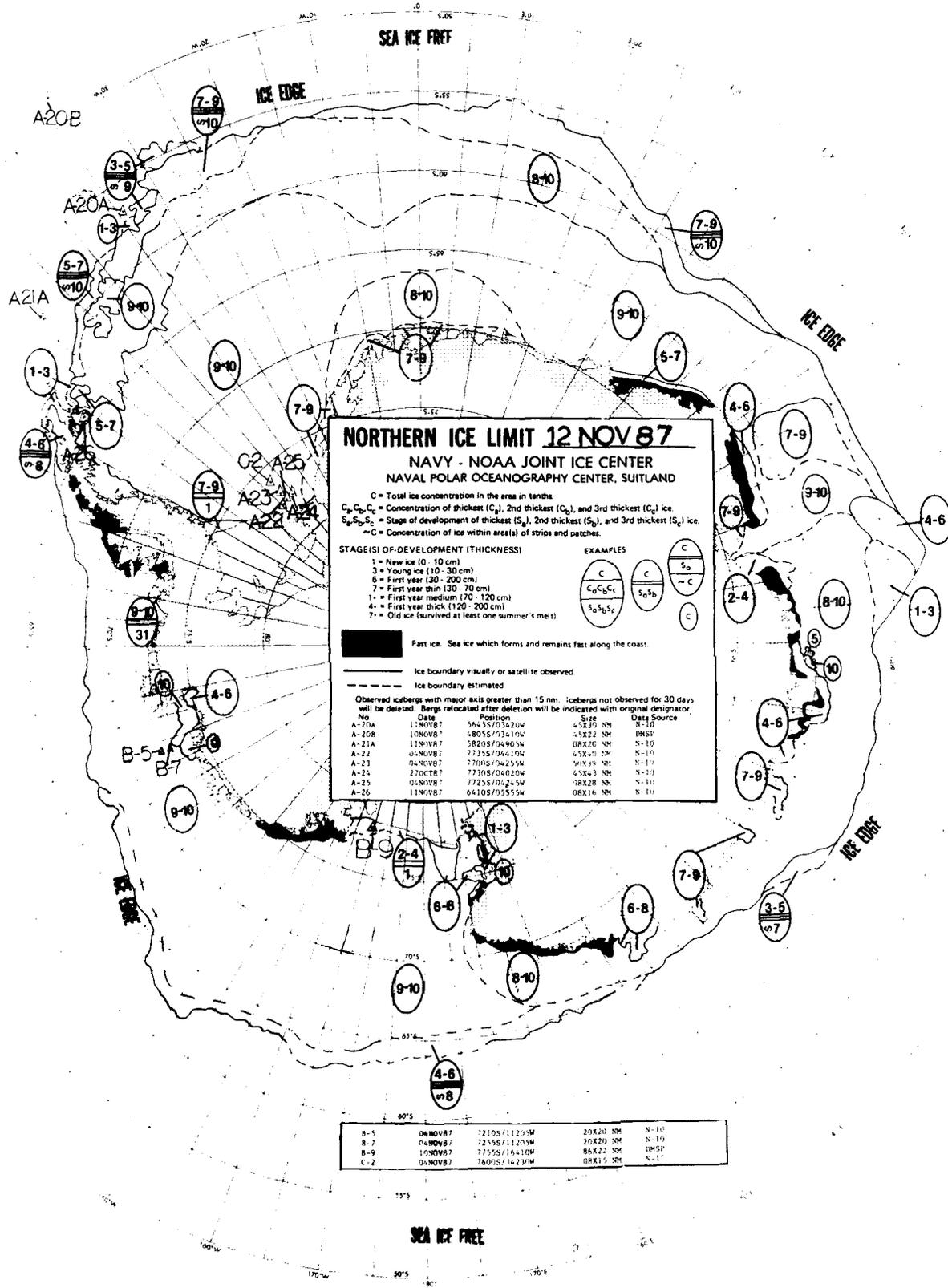
Fast ice. See ice which forms and remains fast along the coast.

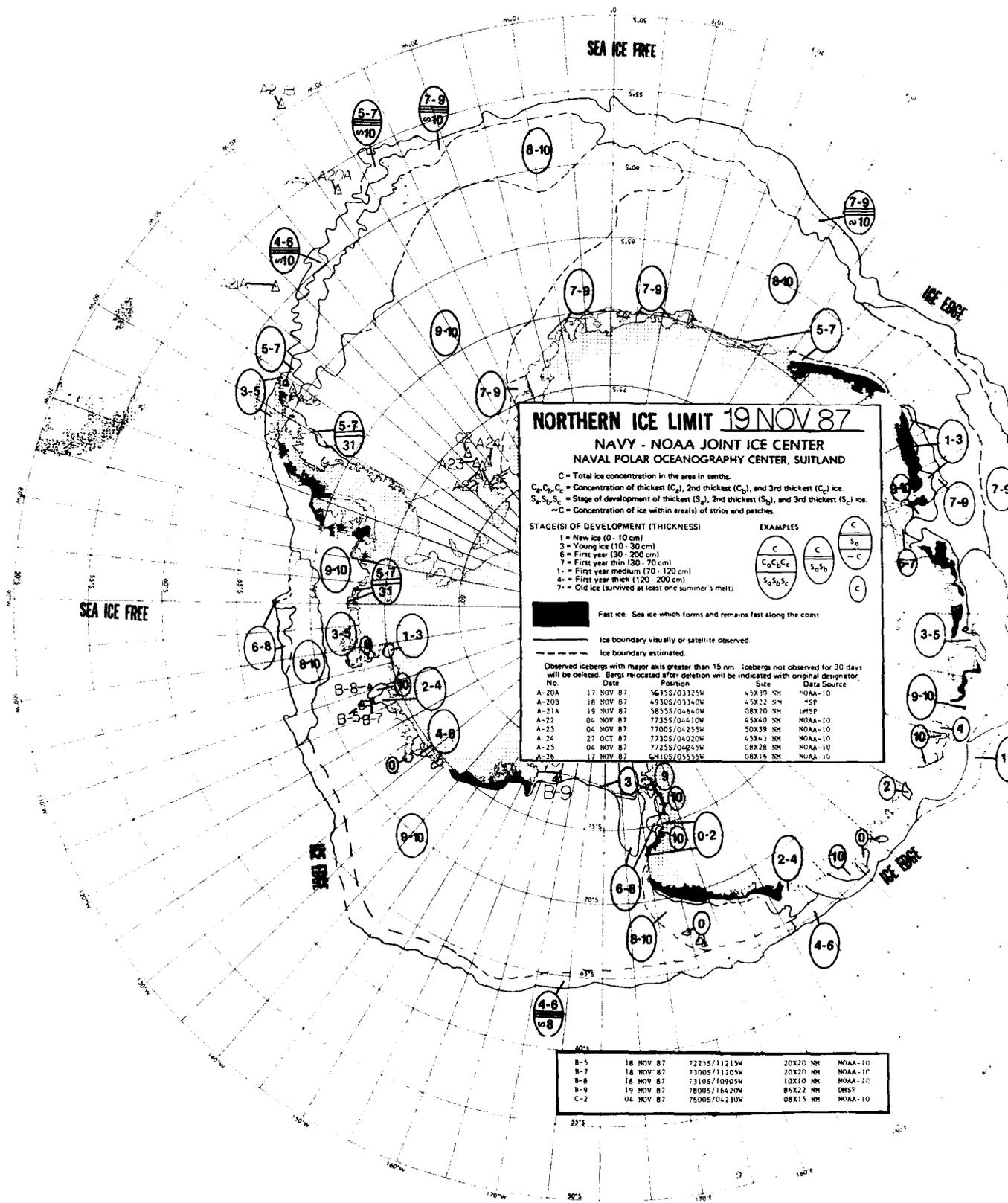
— Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	11 NOV 87	56455/03420W	45X37 NM	N-10
A-20B	10 NOV 87	48055/03410W	45X22 NM	DMSP
A-21A	11 NOV 87	58205/04403W	08X10 NM	N-10
A-22	04 NOV 87	77355/04410W	45X40 NM	N-10
A-23	04 NOV 87	77085/04253W	50X38 NM	N-10
A-24	27 OCT 87	77305/04020W	45X43 NM	N-10
A-25	04 NOV 87	77255/04243W	08X28 NM	N-10
A-26	11 NOV 87	64105/05555W	08X16 NM	N-10

B-5	04 NOV 87	72105/11203W	20X20 NM	N-10
B-7	04 NOV 87	72355/11203W	20X20 NM	N-10
B-9	10 NOV 87	72555/11410W	86X22 NM	DMSP
C-2	04 NOV 87	76005/14230W	08X15 NM	N-10





NORTHERN ICE LIMIT 19 NOV 87
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 $\sim C$ = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

1 = New ice (0 - 10 cm)
 3 = Young ice (10 - 30 cm)
 6 = First year (30 - 200 cm)
 7 = First year thin (30 - 70 cm)
 1 = First year medium (70 - 120 cm)
 4 = First year thick (120 - 200 cm)
 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$	$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{\sim C}$
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Fast ice. Sea ice which forms and remains fast along the coast.

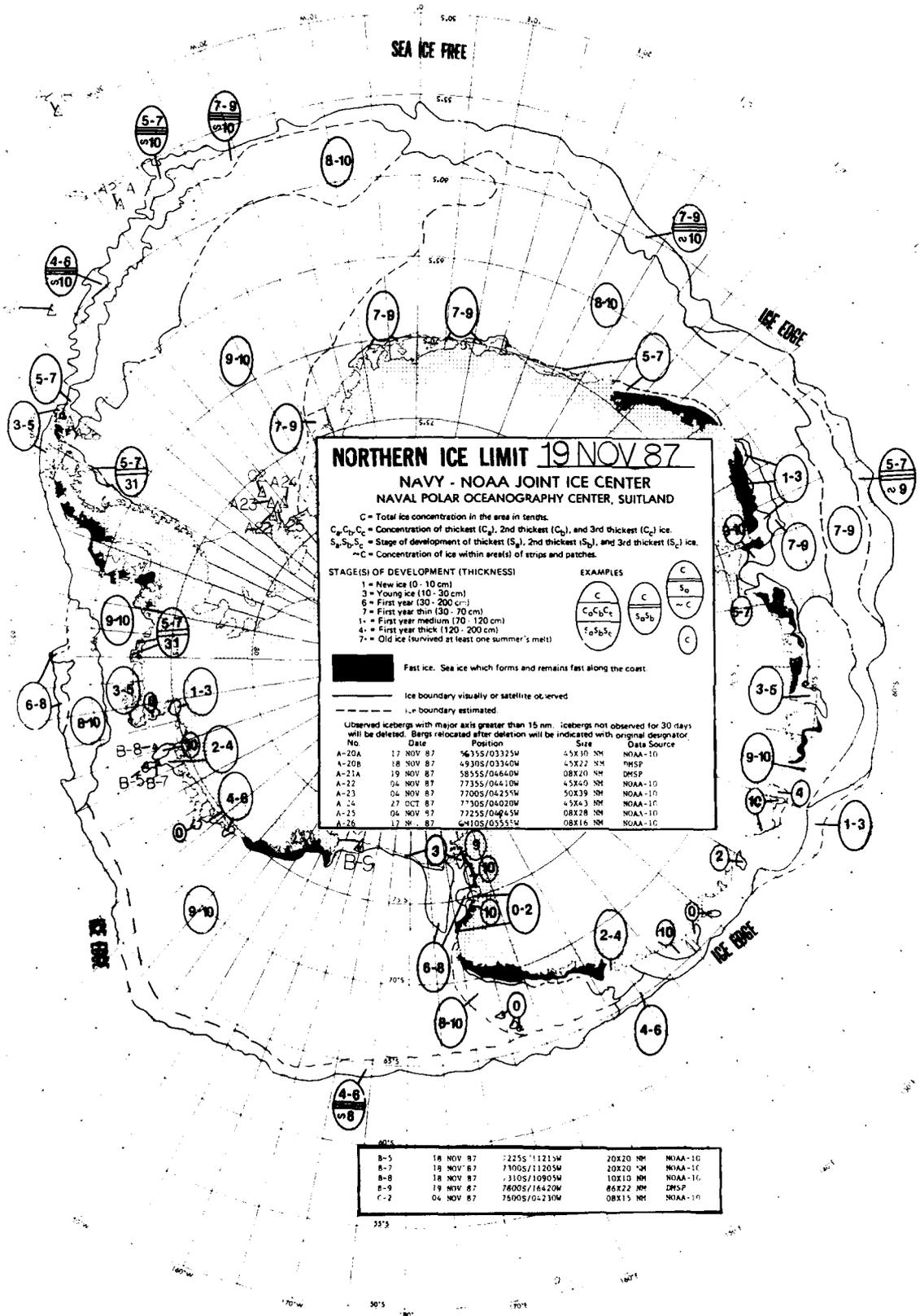
Ice boundary visually or satellite observed.

Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	17 NOV 87	5635S/03325W	45X19 NM	NOAA-10
A-20B	18 NOV 87	4930S/03340W	45X22 NM	NSP
A-21A	19 NOV 87	5855S/04440W	08X20 NM	IMSP
A-22	04 NOV 87	7735S/04410W	45X60 NM	NOAA-10
A-23	04 NOV 87	7700S/04255W	50X39 NM	NOAA-10
A-24	27 OCT 87	7730S/04020W	45X43 NM	NOAA-10
A-25	04 NOV 87	7725S/04645W	08X28 NM	NOAA-10
A-28	17 NOV 87	6910S/05555W	08X15 NM	NOAA-10

B-5	18 NOV 87	7275S/11215W	20X20 NM	NOAA-10
B-7	18 NOV 87	7300S/11205W	20X20 NM	NOAA-10
B-8	18 NOV 87	7310S/10905W	10X10 NM	NOAA-10
B-9	19 NOV 87	7800S/16420W	86X22 NM	IMSP
C-2	04 NOV 87	7500S/04230W	08X15 NM	NOAA-10



NORTHERN ICE LIMIT 19 NOV 87

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year thin (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

C	C	C
$C_1 C_2 C_3$	$S_1 S_2 S_3$	C

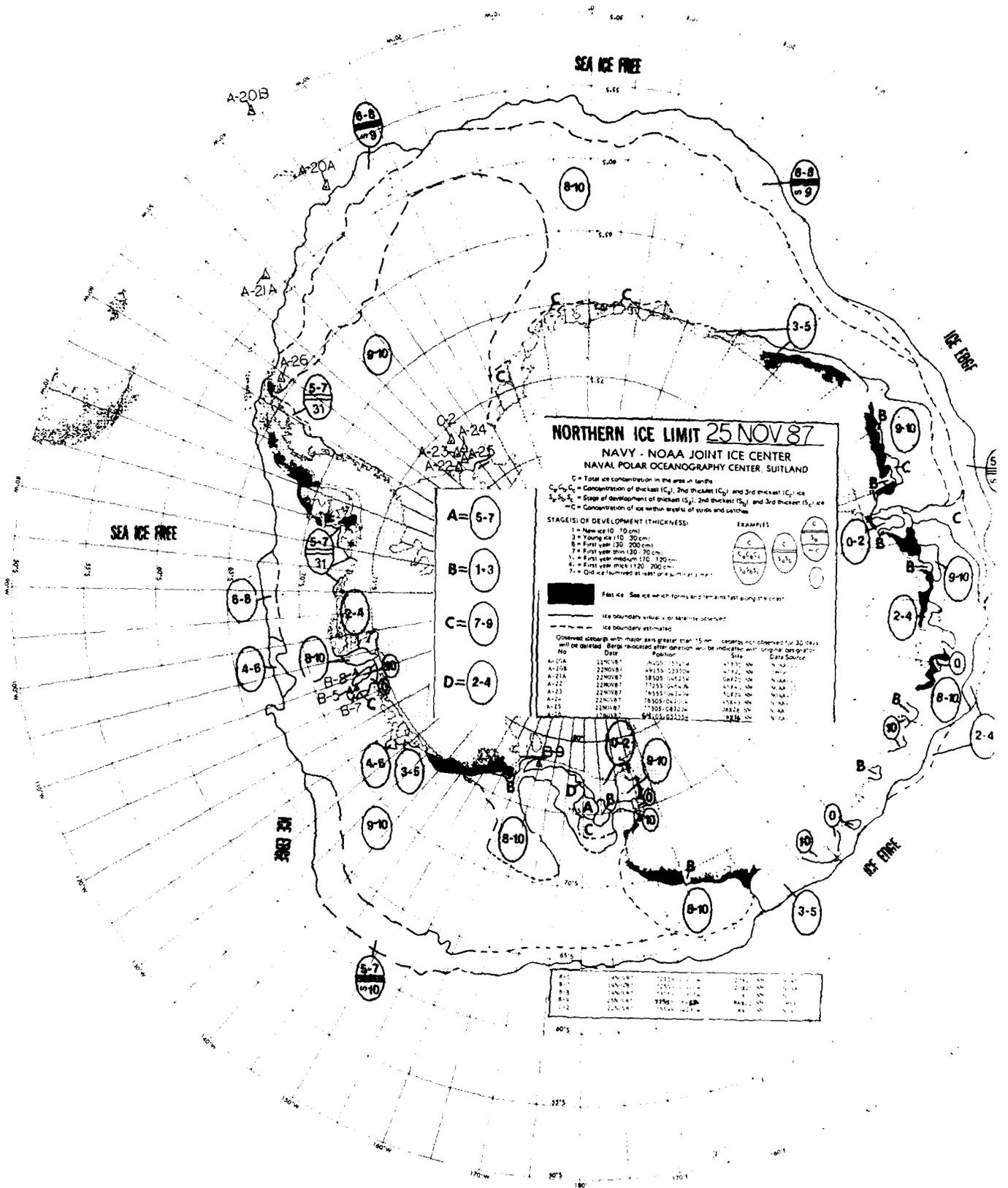
Fast ice. Sea ice which forms and remains fast along the coast.

— Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Date Source
A-20A	17 NOV 87	7635S/03325W	45X10 NM	NOAA-10
A-20B	18 NOV 87	4930S/03340W	45X22 NM	PHSP
A-21A	19 NOV 87	5855S/04640W	08X20 NM	PHSP
A-22	04 NOV 87	7735S/04410W	45X40 NM	NOAA-10
A-23	04 NOV 87	7700S/04235W	50X39 NM	NOAA-10
A-24	27 OCT 87	7730S/04020W	45X43 NM	NOAA-10
A-25	04 NOV 87	7725S/04945W	08X28 NM	NOAA-10
A-26	17 NOV 87	6410S/03535W	08X16 NM	NOAA-10

B-5	18 NOV 87	7225S/11215W	20X20 NM	NOAA-10
B-7	18 NOV 87	7100S/11205W	20X20 NM	NOAA-10
B-8	18 NOV 87	7105S/10905W	10X10 NM	NOAA-10
B-9	19 NOV 87	7600S/18420W	65X22 NM	PHSP
C-2	04 NOV 87	7590S/04230W	08X15 NM	NOAA-10



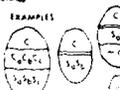
NORTHERN ICE LIMIT 25 NOV 87

NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 M = Concentration of ice within bounds of strids and patches

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice 10 - 15 cm
- 2 = Young ice 15 - 30 cm
- 3 = First year 30 - 200 cm
- 4 = First year thin 130 - 200 cm
- 5 = First year medium 170 - 200 cm
- 6 = First year thick 170 - 200 cm
- 7 = Old ice (formed at least 2 summer seasons)



Fast ice: Sea ice which forms and remains fast along the coast

ice boundary visible or satellite observed

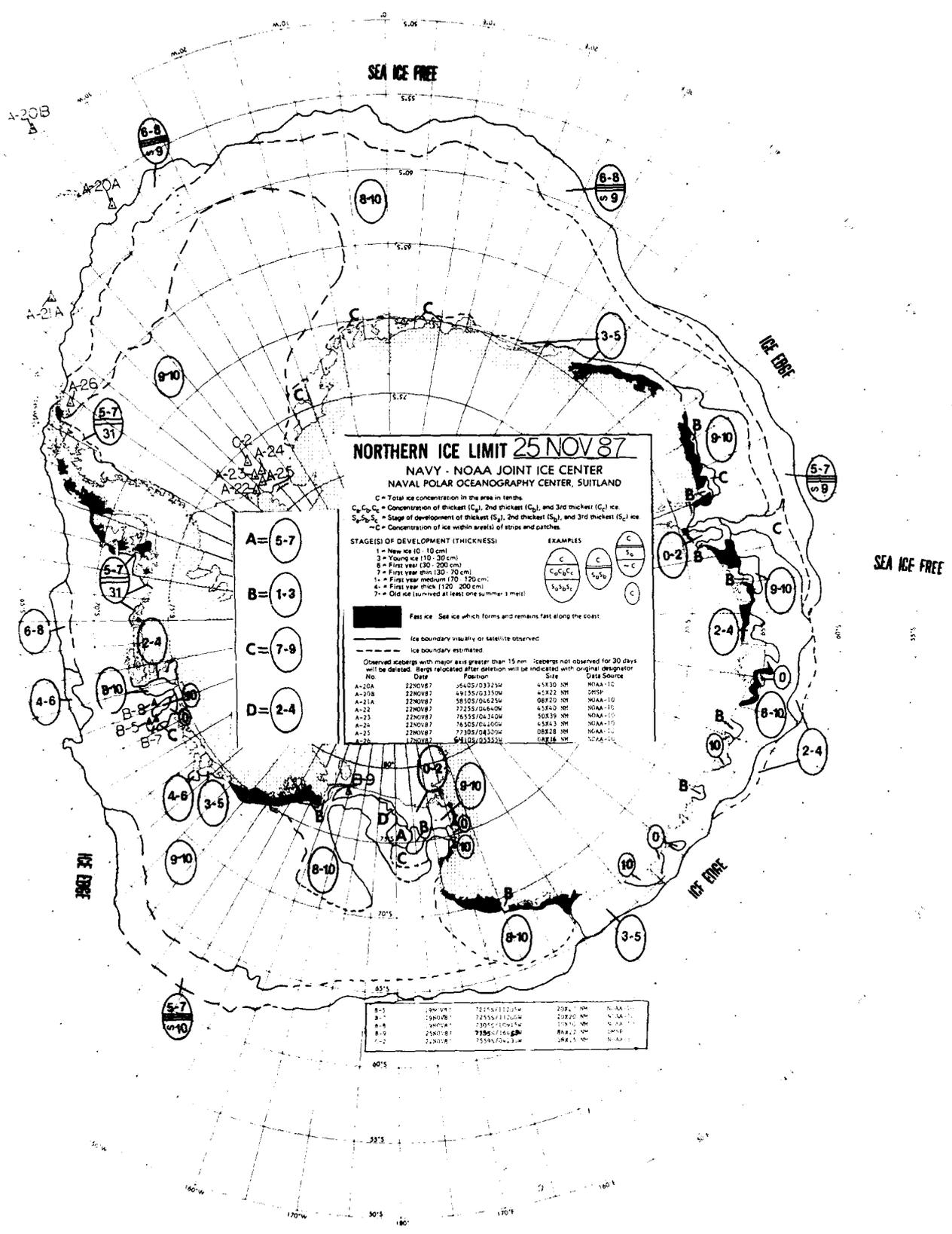
ice boundary estimated

Observed data with major axis greater than 15 nm. clearly not observed for 30 days will be deleted. Berge rechecked after deletion will be indicated with original originator.

No.	Date	Position	State	Data Source
A-20A	22NOV87	76.25 153.74	4-7	NOA
A-20B	22NOV87	69.55 153.00	4-7	NOA
A-21A	22NOV87	78.05 164.50	6-8	NOA
A-22	22NOV87	72.55 164.76	4-7	NOA
A-23	22NOV87	76.55 163.76	4-7	NOA
A-24	22NOV87	78.05 164.50	4-7	NOA
A-25	22NOV87	73.05 163.24	4-7	NOA
A-26	22NOV87	69.55 153.00	4-7	NOA

- A = 5-7
- B = 1-3
- C = 7-9
- D = 2-4

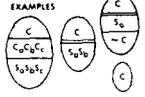
No.	Date	Position	State	Data Source
B-1	25NOV87	72.55 164.76	4-7	NOA
B-2	25NOV87	73.05 163.24	4-7	NOA
B-3	25NOV87	73.55 162.74	4-7	NOA
B-4	25NOV87	74.05 162.24	4-7	NOA
B-5	25NOV87	74.55 161.74	4-7	NOA
B-6	25NOV87	75.05 161.24	4-7	NOA
B-7	25NOV87	75.55 160.74	4-7	NOA
B-8	25NOV87	76.05 160.24	4-7	NOA
B-9	25NOV87	76.55 159.74	4-7	NOA
B-10	25NOV87	77.05 159.24	4-7	NOA



NORTHERN ICE LIMIT 25 NOV 87
 NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C₁C₂C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
 S₁S₂S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
 -C = Concentration of ice within areas of strips and patches.

- STAGE(S) OF DEVELOPMENT (THICKNESS)**
- 1 = New ice (10 - 10 cm)
 - 2 = Young ice (10 - 30 cm)
 - 3 = First year (30 - 200 cm)
 - 4 = First year thin (30 - 70 cm)
 - 5 = First year medium (70 - 120 cm)
 - 6 = First year thick (120 - 200 cm)
 - 7 = Old ice (survived at least one summer's melt)



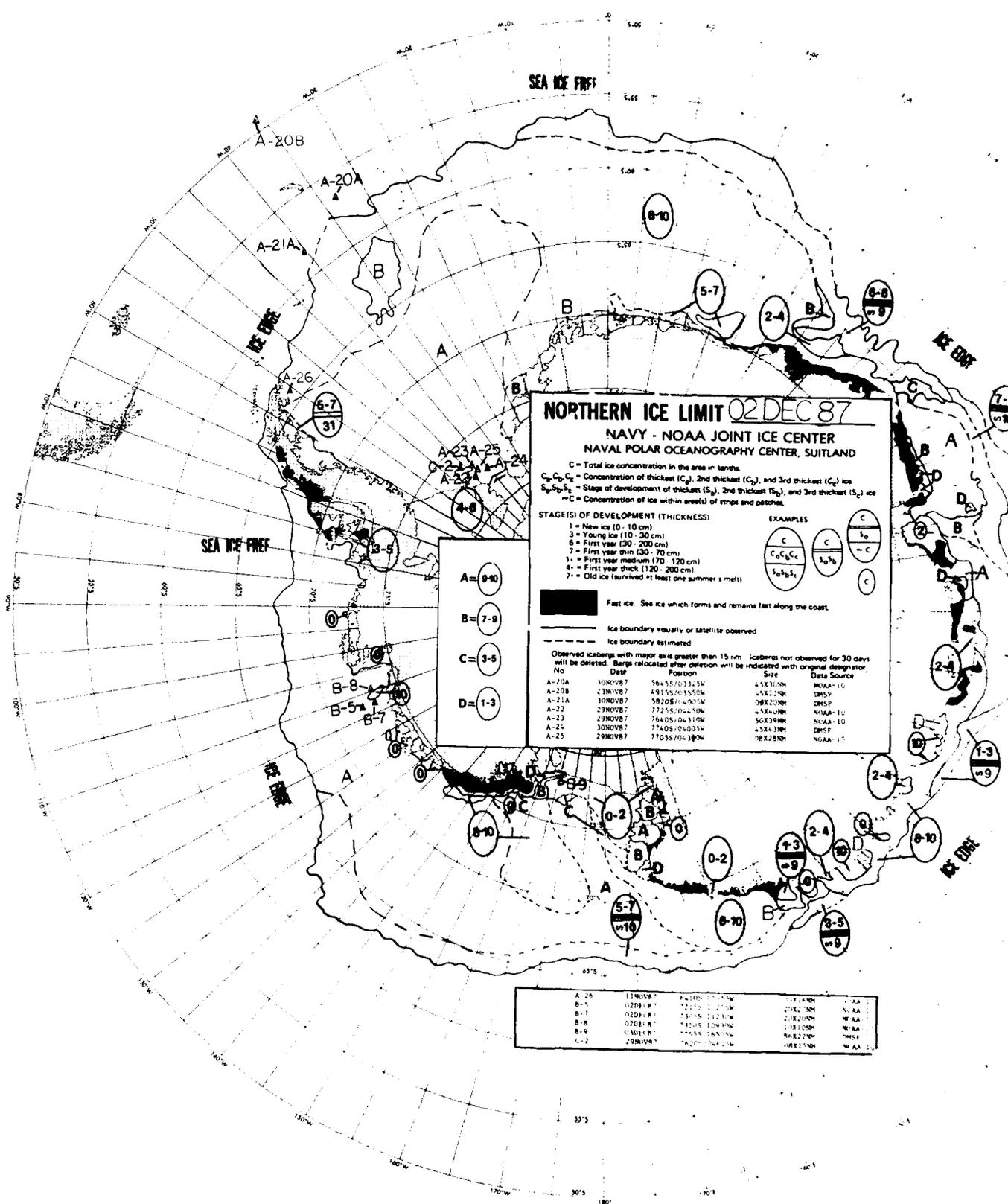
- A = 5-7
- B = 1-3
- C = 7-9
- D = 2-4

Fast ice - Sea ice which forms and remains fast along the coast.
 --- Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	22NOV87	7642S/03325W	41X30 NM	NOAA-1C
A-20B	22NOV87	4912S/03350W	41X22 NM	ORSP
A-21A	22NOV87	5810S/04623W	08X20 NM	NOAA-1D
A-22	22NOV87	7225S/04840W	43X40 NM	NOAA-1C
A-23	22NOV87	7655S/04340W	50X38 NM	NOAA-1C
A-24	22NOV87	7632S/04400W	43X43 NM	NOAA-1D
A-25	22NOV87	7730S/04300W	08X28 NM	NOAA-1C
A-26	22NOV87	6810S/03350W	08X28 NM	NOAA-1C

B-1	22NOV87	7215S/03120W	20X11 NM	NOAA-1C
B-7	19NOV87	7255S/03120W	10X20 NM	NOAA-1C
B-8	19NOV87	7305S/02925W	09X10 NM	NOAA-1C
B-9	23NOV87	7155S/03638W	08X12 NM	ORSP
D-2	22NOV87	7558S/04130W	08X11 NM	NOAA-1C



NORTHERN ICE LIMIT 02 DEC 87

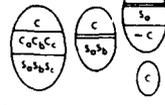
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
-C = Concentration of ice within areals of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS):

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



- A = 9-10
- B = 7-9
- C = 3-5
- D = 1-3

Fast ice: See ice which forms and remains fast along the coast.

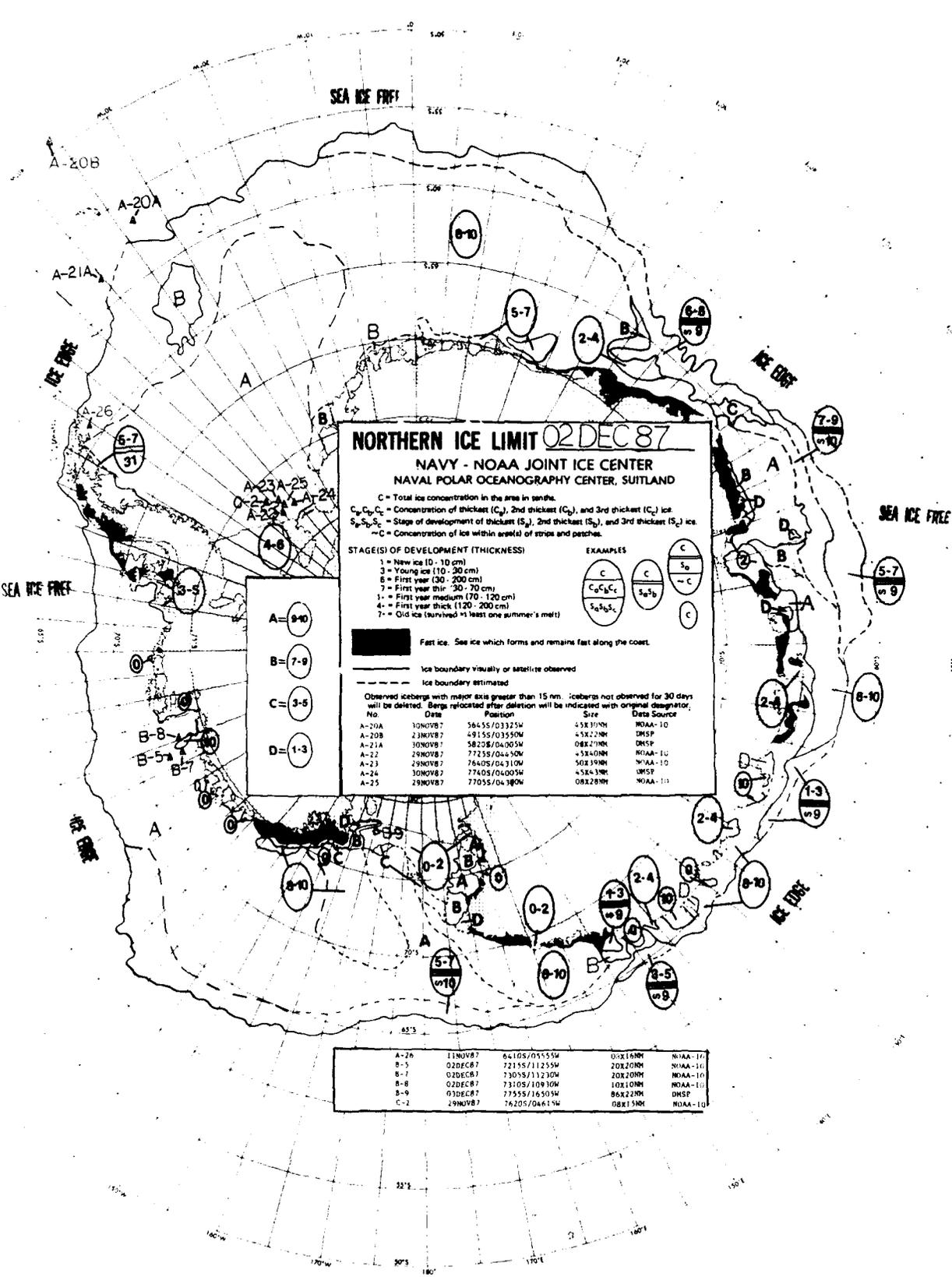
Ice boundary visually or satellite observed

Ice boundary estimated

Observed icebergs with major axis greater than 15 m. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	10NOV87	56°55'03.25N	41X17NM	NOAA-10
A-20B	23NOV87	49°15'03.550N	45X22NM	DMSP
A-21A	30NOV87	58°20'04.000N	08X20NM	DMSP
A-22	29NOV87	77°25'04.500N	45X40NM	NOAA-10
A-23	29NOV87	78°05'04.100N	50X30NM	NOAA-10
A-24	30NOV87	77°05'04.000N	45X33NM	DMSP
A-25	29NOV87	77°05'04.100N	08X28NM	NOAA-10

A-26	11NOV87	64°10'03.550N	11X14NM	NOAA-10
B-5	02DEC87	72°50'12.100N	20X22NM	NOAA-10
B-7	02DEC87	78°05'12.210N	23X20NM	NOAA-10
B-8	02DEC87	78°15'12.000N	23X20NM	NOAA-10
B-9	03DEC87	77°55'16.000N	08X22NM	DMSP
C-2	29NOV87	78°20'04.100N	08X15NM	NOAA-10



NORTHERN ICE LIMIT 02 DEC 87

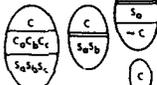
NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in percent.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areal of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (20 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



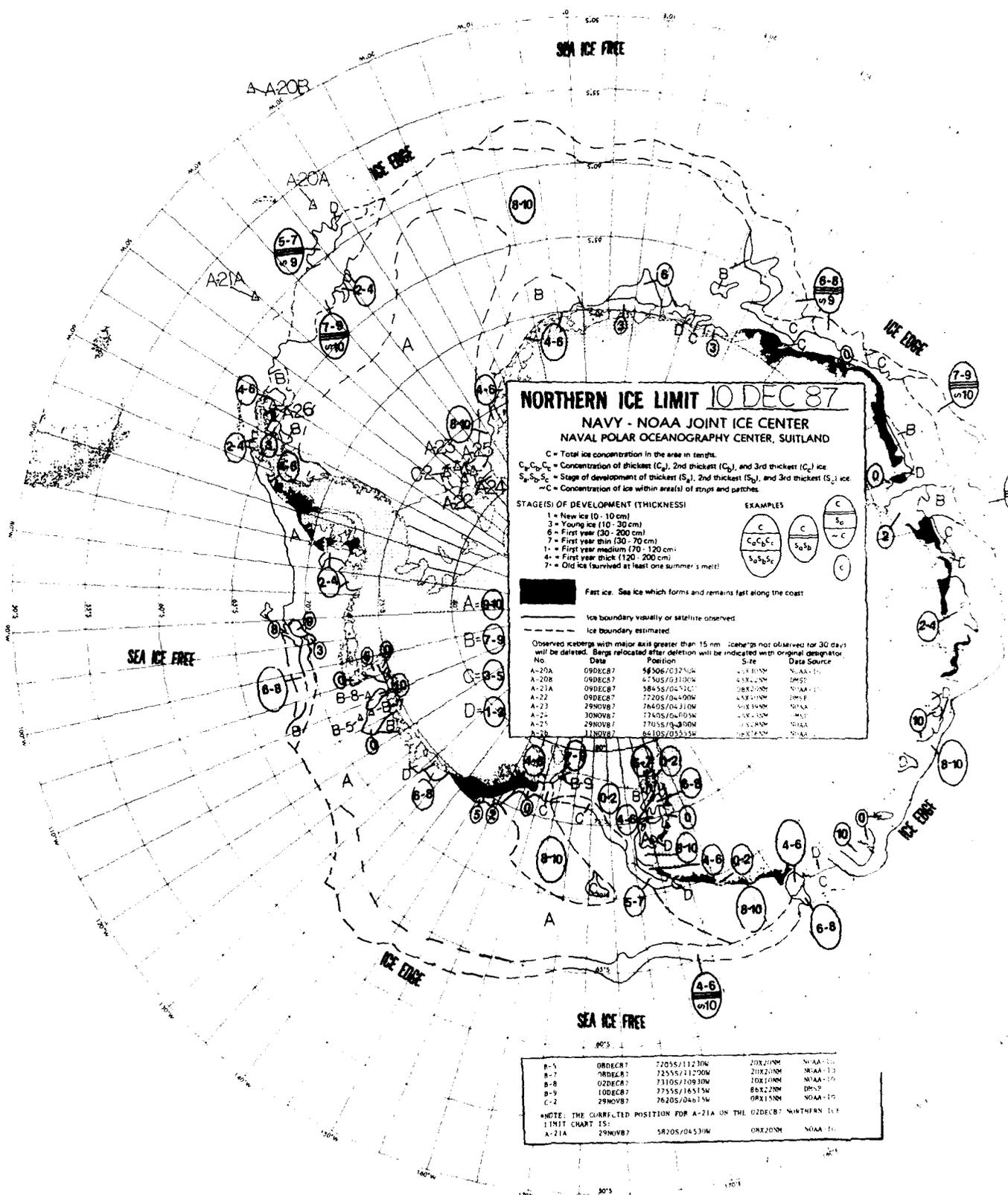
- A = 8-10
- B = 7-9
- C = 3-5
- D = 1-3

Fast ice. See ice which forms and remains fast along the coast.
 --- Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	10NOV87	56455/03325W	45X10NM	NOAA-10
A-20B	23NOV87	49155/03550W	45X22NM	DMSP
A-21A	30NOV87	58225/04005W	08X27NM	DMSP
A-22	29NOV87	77255/04430W	45X40NM	NOAA-10
A-23	29NOV87	76405/04310W	50X30NM	NOAA-10
A-24	10NOV87	77405/04005W	45X33NM	DMSP
A-25	29NOV87	77055/04180W	08X28NM	NOAA-10

A-26	11NOV87	64105/05555W	00X16NM	NOAA-10
B-5	02DEC87	72155/11255W	20X20NM	NOAA-10
B-7	02DEC87	73055/11230W	20X20NM	NOAA-10
B-8	02DEC87	73105/10930W	10X10NM	NOAA-10
B-9	03DEC87	77555/16505W	06X22NM	DMSP
C-3	29NOV87	76205/04615W	08X15NM	NOAA-10



NORTHERN ICE LIMIT 10 DEC 87
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within areas of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

1 = New ice (0 - 10 cm)
 3 = Young ice (10 - 30 cm)
 6 = First year (30 - 200 cm)
 7 = First year thin (50 - 70 cm)
 1 = First year medium (70 - 120 cm)
 4 = First year thick (120 - 200 cm)
 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$ $\frac{C}{S_1 S_2 S_3}$ $\frac{C}{\sim C}$

Fast ice: Sea ice which forms and remains fast along the coast

Ice boundary visually or satellite observed

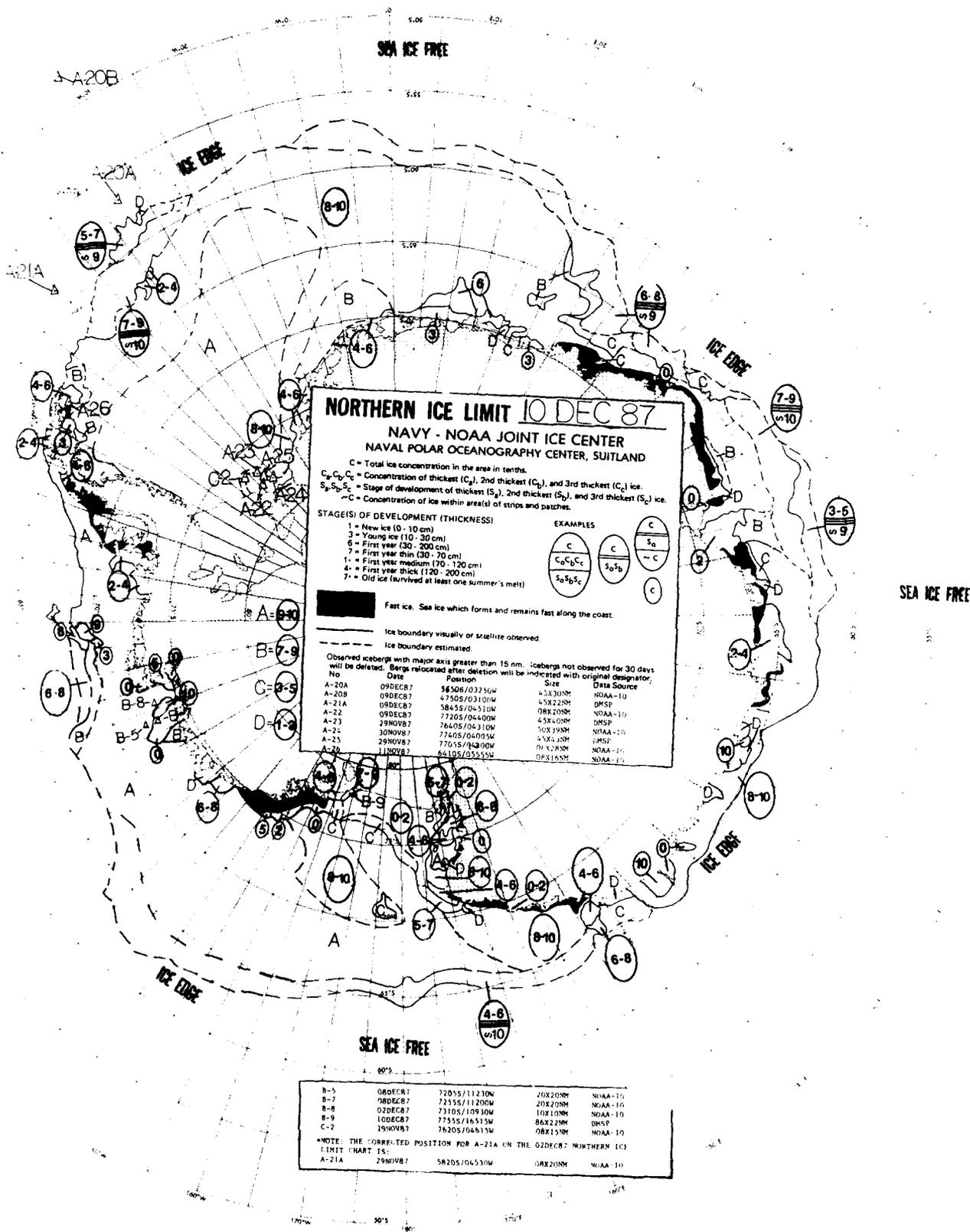
Ice boundary estimated

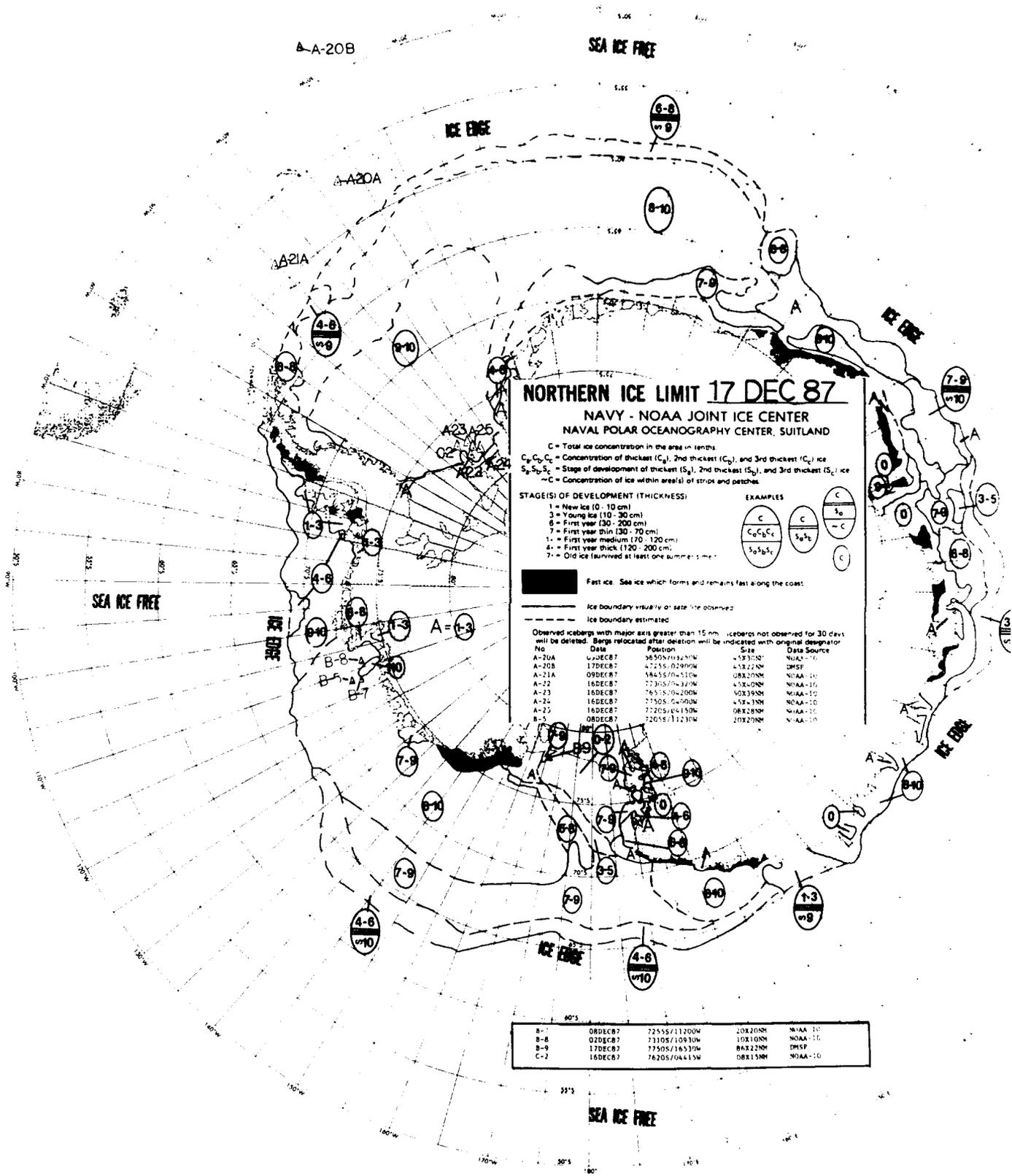
Observed icebergs with major axis greater than 15 nm (icebergs not observed for 30 days) will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Site	Data Source
A-20A	09DEC87	58306/03215W	4310NM	NOAA-10
A-20B	09DEC87	67305/03100W	43X20NM	DMSP
A-21A	09DEC87	58458/04110E	28X20NM	NOAA-10
A-22	09DEC87	72205/04000W	43X10NM	DMSP
A-23	29NOV87	76405/04310W	50X10NM	NOAA-10
A-24	30NOV87	73405/04000W	43X10NM	DMSP
A-25	29NOV87	77055/04300W	43X10NM	NOAA-10
A-26	11NOV87	86105/05535W	48X10NM	NOAA-10

NOTE: THE CORRELATED POSITION FOR A-21A ON THE 02DEC87 NORTHERN ICE LIMIT CHART IS:

A-21A	29NOV87	58205/04530W	08X20NM	NOAA-10
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NORTHERN ICE LIMIT 17 DEC 87

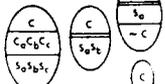
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice
 -C = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS):

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 8 = First year medium (70 - 120 cm)
- 9 = First year thick (120 - 200 cm)
- 7+ = Old ice (survived at least one summer)

EXAMPLES



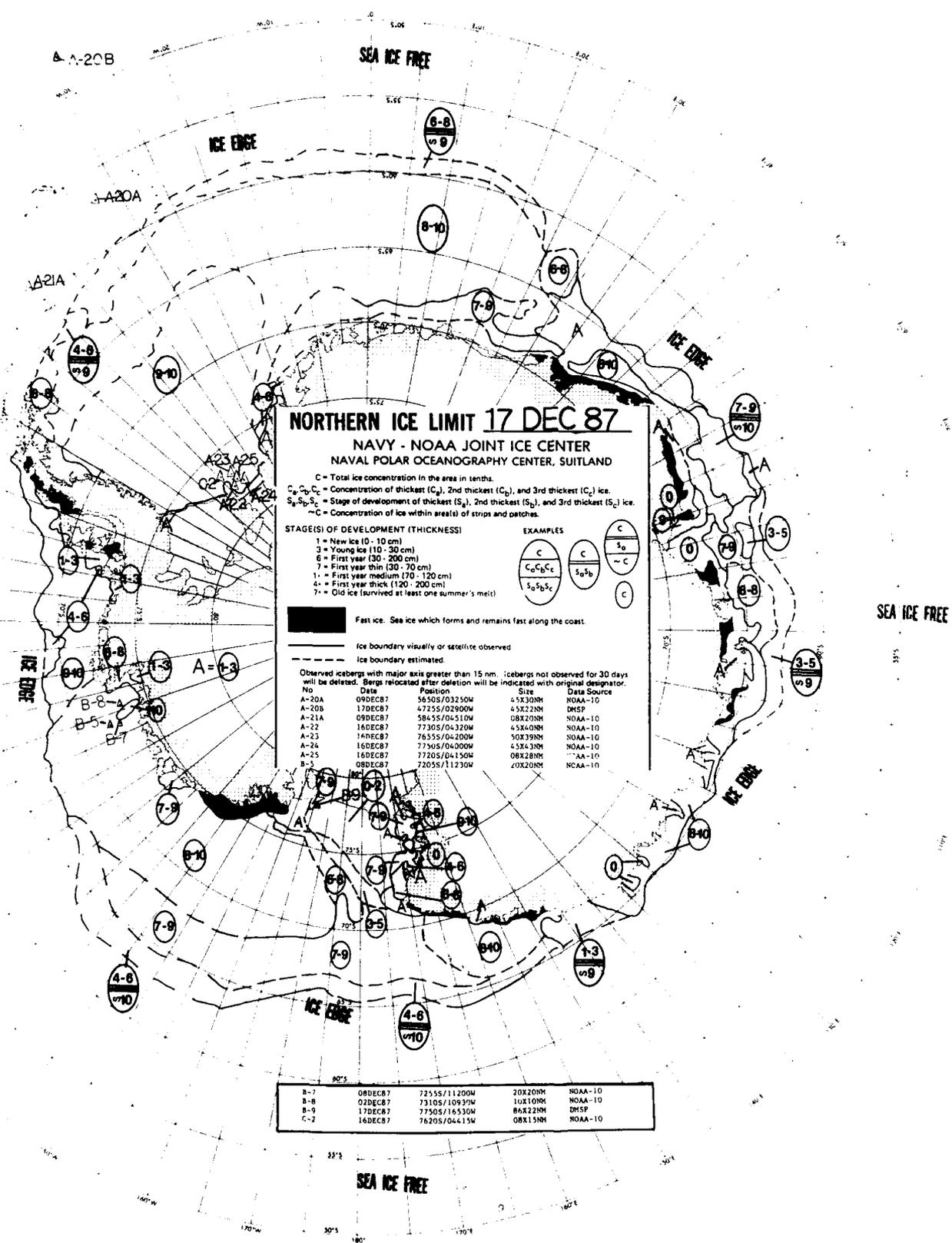
Fast ice: See ice which forms and remains fast along the coast.

Ice boundary visually or site observed
 Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

Id	Date	Position	Size	Data Source
A-20A	14DEC87	0850N/11270W	45X370M	NAO-10
A-20B	17DEC87	4725S/0290W	45X220M	DMSP
A-21A	09DEC87	5845S/04510W	08X270M	NOAA-10
A-22	16DEC87	7730S/07320W	45X400M	NOAA-10
A-23	16DEC87	7651S/07200W	60X390M	NOAA-10
A-24	16DEC87	7750S/06700W	45X330M	NOAA-10
A-25	16DEC87	7720S/04150W	08X280M	NOAA-10
B-8	08DEC87	7205S/11230W	20X270M	NOAA-10

B-1	08DEC87	7255S/11200W	20X200M	NOAA-10
B-8	02DEC87	7310S/10930W	10X100M	NOAA-10
B-9	17DEC87	7750S/16530W	86X220M	DMSP
C-2	16DEC87	7620S/04415W	08X150M	NOAA-10



NORTHERN ICE LIMIT 17 DEC 87

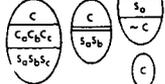
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 $\sim C$ = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

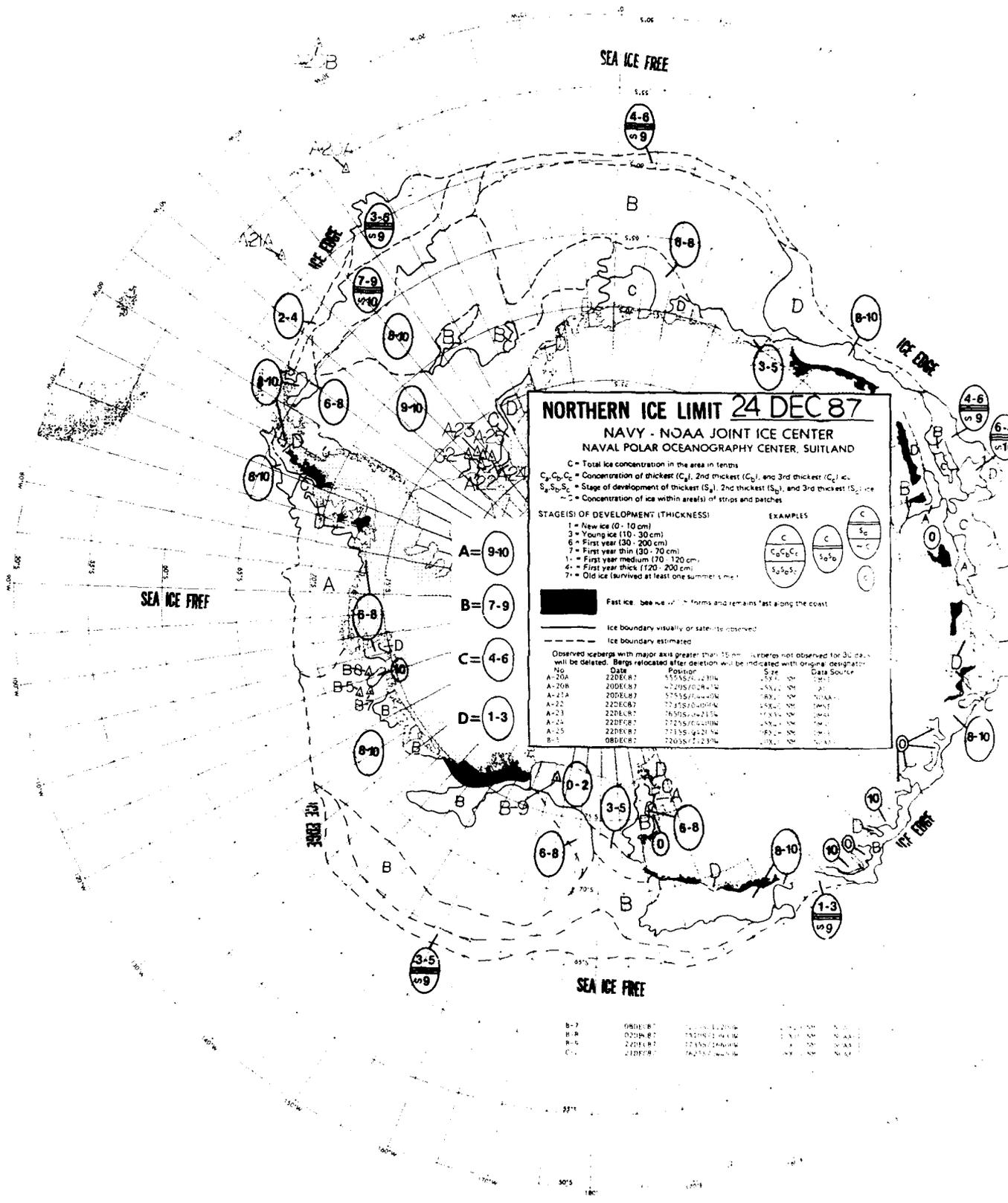
EXAMPLES



- Fast ice. Sea ice which forms and remains fast along the coast.
- Ice boundary visually or satellite observed.
- Ice boundary estimated.

Observed icebergs with major axis greater than 15 nm.				Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.					
No.	Date	Position	Size	Data Source	No.	Date	Position	Size	Data Source
A-20A	09DEC87	5650S/03250W	45X30NM	NOAA-10	B-7	08DEC87	7255S/11200W	20X20NM	NOAA-10
A-20B	17DEC87	4725S/02900W	45X22NM	DMSF	B-8	02DEC87	7310S/10930W	10X10NM	NOAA-10
A-21A	09DEC87	5845S/04510W	08X20NM	NOAA-10	B-9	17DEC87	7750S/16530W	86X22NM	DMSF
A-22	16DEC87	7730S/04320W	45X40NM	NOAA-10	C-2	16DEC87	7620S/04415W	08X15NM	NOAA-10
A-23	16DEC87	7655S/04200W	50X39NM	NOAA-10					
A-24	16DEC87	7750S/04000W	45X43NM	NOAA-10					
A-25	16DEC87	7720S/04150W	08X28NM	NOAA-10					
B-5	08DEC87	7205S/11230W	20X20NM	NOAA-10					

B-7	08DEC87	7255S/11200W	20X20NM	NOAA-10
B-8	02DEC87	7310S/10930W	10X10NM	NOAA-10
B-9	17DEC87	7750S/16530W	86X22NM	DMSF
C-2	16DEC87	7620S/04415W	08X15NM	NOAA-10



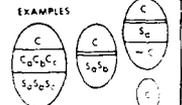
NORTHERN ICE LIMIT 24 DEC 87

NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice
 - = Concentration of ice within areas/ of strips and patches

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)



Fast ice: sea ice which forms and remains fast along the coast
 --- Ice boundary visually or satellite observed
 - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 m. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20R	22DEC87	65°55'N 142°11'W	170 x 100 m	NOAA
A-20R	20DEC87	67°20'S 170°28'W	150 x 100 m	NOAA
A-21A	20DEC87	67°55'S 170°40'W	180 x 100 m	NOAA
A-22	22DEC87	73°25'S 170°00'W	150 x 100 m	NOAA
A-23	22DEC87	76°50'S 170°15'W	110 x 100 m	NOAA
A-24	22DEC87	77°25'S 170°00'W	150 x 100 m	NOAA
A-25	22DEC87	77°35'S 172°15'W	180 x 100 m	NOAA
B-5	08DEC87	72°05'S 172°30'W	100 x 100 m	NOAA

B-7	08DEC87	72°05'S 172°30'W	100 x 100 m	NOAA
B-8	07DEC87	72°05'S 172°30'W	100 x 100 m	NOAA
B-5	22DEC87	72°05'S 172°30'W	100 x 100 m	NOAA
C-1	21DEC87	76°25'S 170°15'W	100 x 100 m	NOAA

SEA ICE FREE

SEA ICE FREE

NORTHERN ICE LIMIT 24 DEC 87

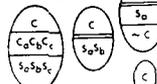
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
-C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS):

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



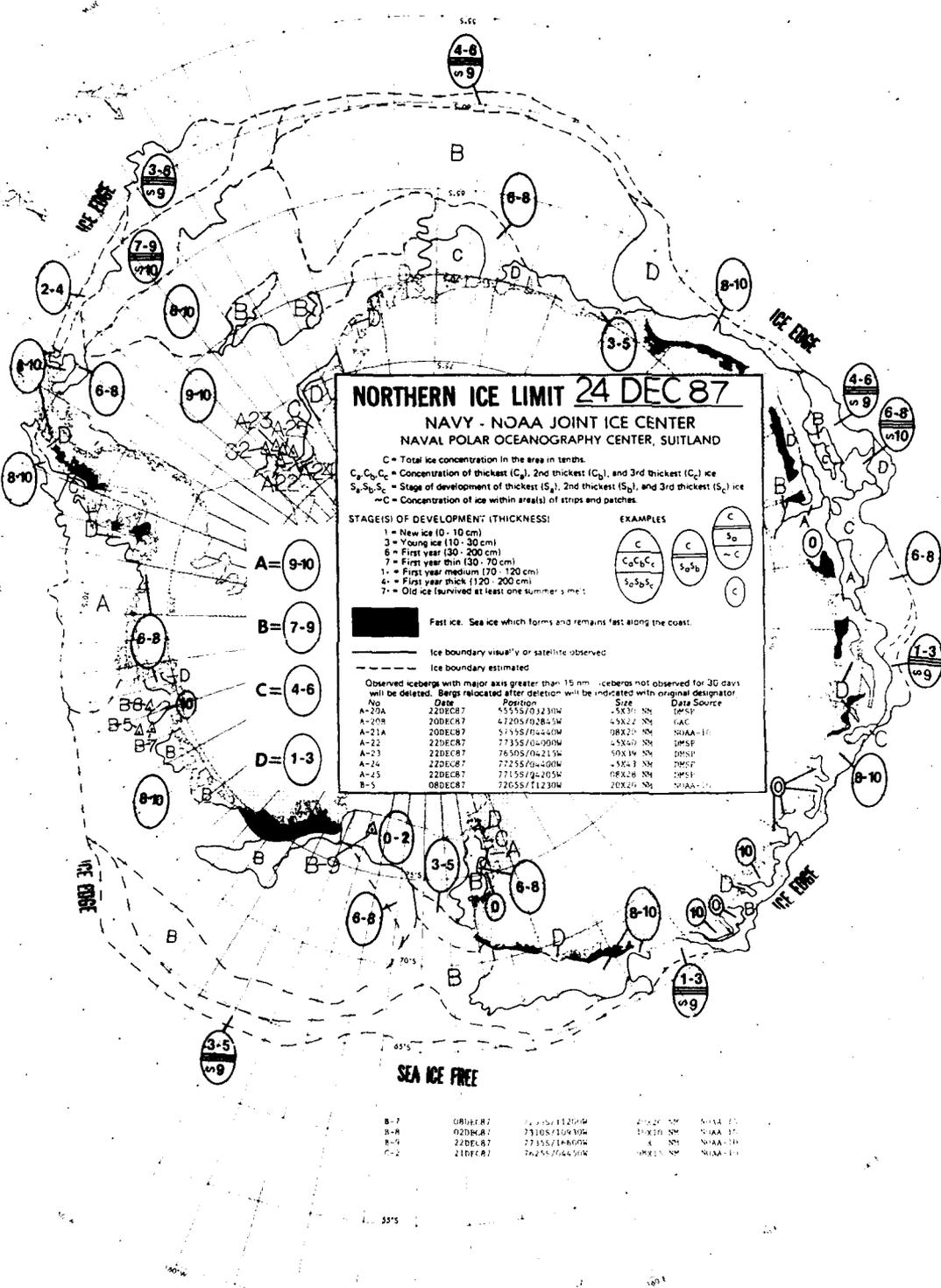
- Fast ice: Sea ice which forms and remains fast along the coast.
- Ice boundary visually or satellite observed
- Ice boundary estimated

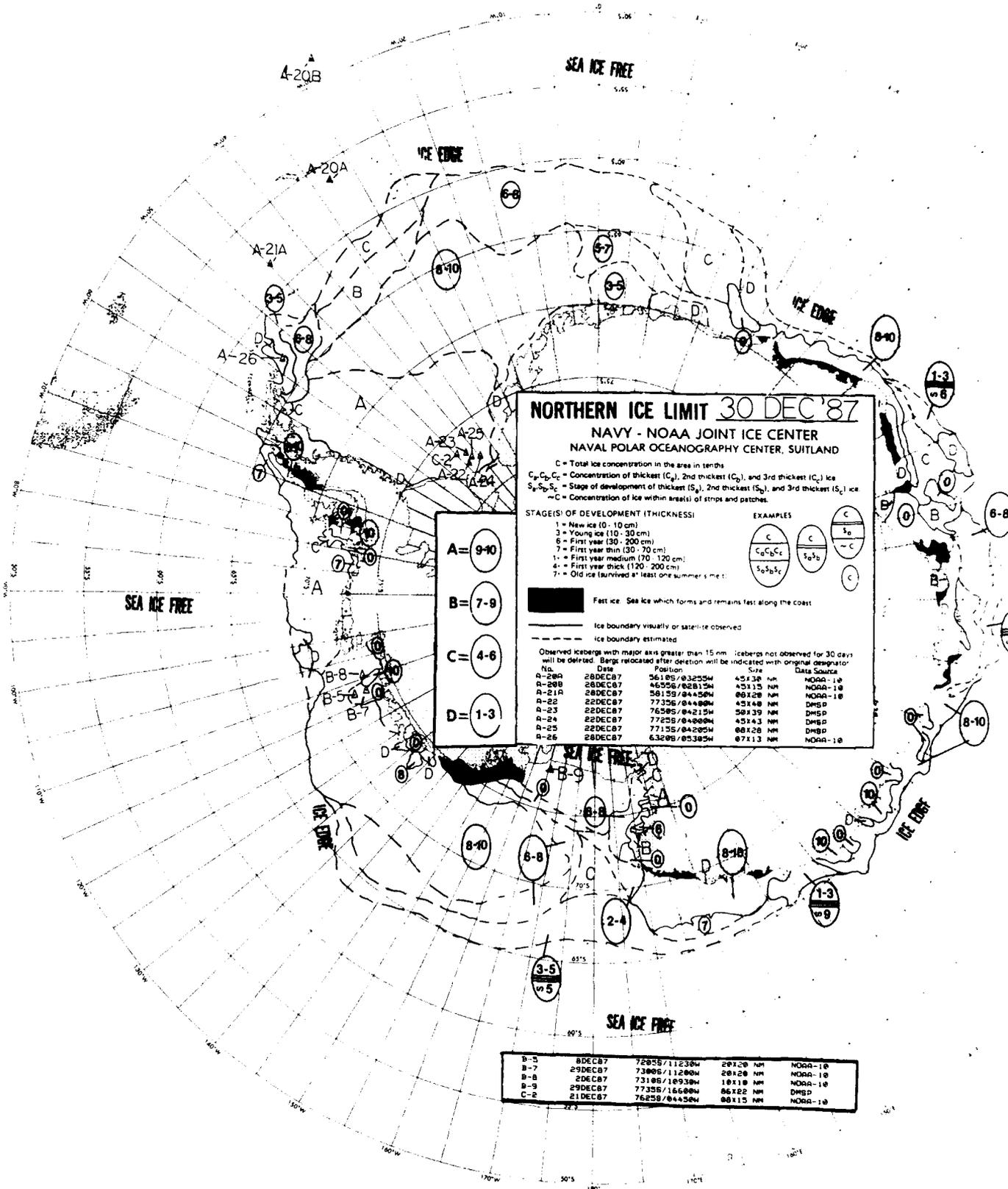
Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

Idg	Date	Position	Size	Data Source
A=20A	22DEC87	65°55'01.230W	45X30 NM	DMSP
A=20B	20DEC87	47°20'57.02843W	45X22 NM	GAC
A=21A	20DEC87	57°55'04.440W	08X20 NM	NOAA-1E
A=22	22DEC87	77°35'04.900W	45X10 NM	DMSP
A=23	22DEC87	76°00'04.215W	50X14 NM	DMSP
A=24	22DEC87	77°25'04.400W	45X11 NM	DMSP
A=25	22DEC87	77°15'04.205W	08X18 NM	DMSP
B=5	08DEC87	72°35'11.230W	20X20 NM	NOAA-1E

SEA ICE FREE

B=7	08DEC87	74°05'11.200W	20X20 NM	NOAA-1E
B=8	02DEC87	73°10'57.100W	10X10 NM	NOAA-1E
B=9	22DEC87	77°35'14.860W	4 NM	NOAA-1E
C=2	21DEC87	76°25'26.4450W	08X15 NM	NOAA-1E





NORTHERN ICE LIMIT 30 DEC '87

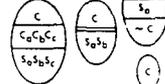
NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 -C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS):

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 4 = First year medium (70 - 120 cm)
- 1 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



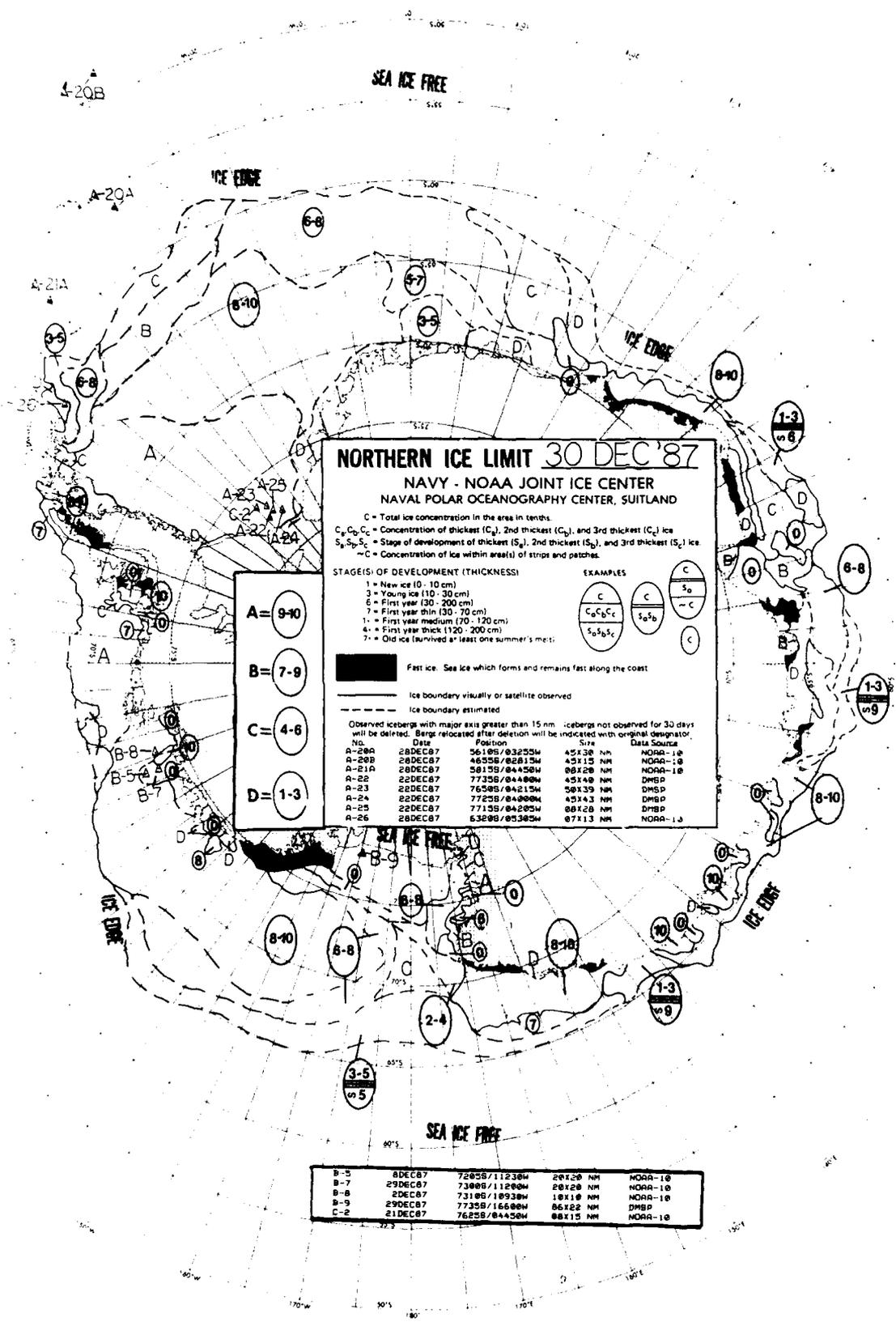
- A = 9-10
- B = 7-9
- C = 4-6
- D = 1-3

Fast ice - Sea ice which forms and remains fast along the coast
 --- Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	28DEC87	5618S/03255W	45139 NM	NOAA-10
A-20B	28DEC87	4652S/02815W	45115 NM	NOAA-10
A-21A	28DEC87	5813S/04456W	86128 NM	NOAA-10
A-22	28DEC87	7735S/04489W	45148 NM	DHSP
A-23	28DEC87	7659S/04215W	59139 NM	DHSP
A-24	28DEC87	7725S/04008W	45143 NM	DHSP
A-25	28DEC87	7715S/04205W	88128 NM	DHSP
A-26	28DEC87	6329S/05385W	07113 NM	NOAA-10

B-5	8DEC87	7205S/11230W	29129 NM	NOAA-10
B-7	29DEC87	7300S/11200W	20128 NM	NOAA-10
B-8	29DEC87	7310S/10930W	10118 NM	NOAA-10
B-9	29DEC87	7735S/10680W	86122 NM	DHSP
C-2	21DEC87	7625S/04456W	88115 NM	NOAA-10



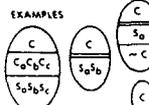
NORTHERN ICE LIMIT 30 DEC '87

NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)



- A = 9-10
- B = 7-9
- C = 4-6
- D = 1-3

■ Fast ice. Sea ice which forms and remains fast along the coast.
 - - - Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Berge relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	28DEC87	5610S/03255W	45X38 NM	NORR-10
A-20B	28DEC87	4655S/02815W	45X15 NM	NORR-10
A-21A	28DEC87	5815S/04450W	80X28 NM	NORR-10
A-22	22DEC87	7735S/04400W	45X40 NM	DMSP
A-23	22DEC87	7650S/04215W	50X39 NM	DMSP
A-24	22DEC87	7725S/04000W	45X43 NM	DMSP
A-25	22DEC87	7715S/04205W	80X28 NM	DMSP
A-26	28DEC87	6320S/05385W	87X13 NM	NORR-13

B-5	8DEC87	7205S/11230W	20X20 NM	NORR-10
B-7	29DEC87	7300S/11200W	20X20 NM	NORR-10
B-8	29DEC87	7310S/10930W	18X18 NM	NORR-10
B-9	29DEC87	7735S/16500W	86X22 NM	DMSP
C-2	21DEC87	7625S/04450W	88X15 NM	NORR-10

SEA ICE FREE

A-20B

A-20A

SEA ICE FREE

ICE EDGE

A-21A

A-23

A-24

NORTHERN ICE LIMIT 07 JAN 88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
C = Concentration of ice within areas of strips and parties

STAGES OF DEVELOPMENT, THICKNESSES

- 1 - New ice 10 - 10 cm
- 2 - Young ice 10 - 30 cm
- 3 - First year 30 - 200 cm
- 4 - First year thin 30 - 70 cm
- 5 - First year med um 70 - 120 cm
- 6 - First year thick 120 - 225 cm
- 7 - Old ice survived at least 1 year



Partice: Sea ice of 100m or more in length and 10m or more in width
Ice boundary: visible or satellite derived
Ice boundary: estimated

Observed icebergs with major axis greater than 75m and minor axis greater than 30m will be detected. Berge reported after detection on the date and within 100 miles of the date.

No.	Date	Lat	Long	Height	Area	Remarks
1	10/14/87	72.10N	156.10W	10	100	Small iceberg
2	10/14/87	72.10N	156.10W	10	100	Small iceberg
3	10/14/87	72.10N	156.10W	10	100	Small iceberg
4	10/14/87	72.10N	156.10W	10	100	Small iceberg
5	10/14/87	72.10N	156.10W	10	100	Small iceberg
6	10/14/87	72.10N	156.10W	10	100	Small iceberg
7	10/14/87	72.10N	156.10W	10	100	Small iceberg
8	10/14/87	72.10N	156.10W	10	100	Small iceberg
9	10/14/87	72.10N	156.10W	10	100	Small iceberg
10	10/14/87	72.10N	156.10W	10	100	Small iceberg
11	10/14/87	72.10N	156.10W	10	100	Small iceberg
12	10/14/87	72.10N	156.10W	10	100	Small iceberg
13	10/14/87	72.10N	156.10W	10	100	Small iceberg
14	10/14/87	72.10N	156.10W	10	100	Small iceberg
15	10/14/87	72.10N	156.10W	10	100	Small iceberg
16	10/14/87	72.10N	156.10W	10	100	Small iceberg
17	10/14/87	72.10N	156.10W	10	100	Small iceberg
18	10/14/87	72.10N	156.10W	10	100	Small iceberg
19	10/14/87	72.10N	156.10W	10	100	Small iceberg
20	10/14/87	72.10N	156.10W	10	100	Small iceberg

- A = 9-10
- B = 7-9
- C = 4-6
- D = 1-3

SEA ICE FREE

ICE EDGE

SEA ICE FREE

ICE EDGE

ICE EDGE

SEA ICE FREE

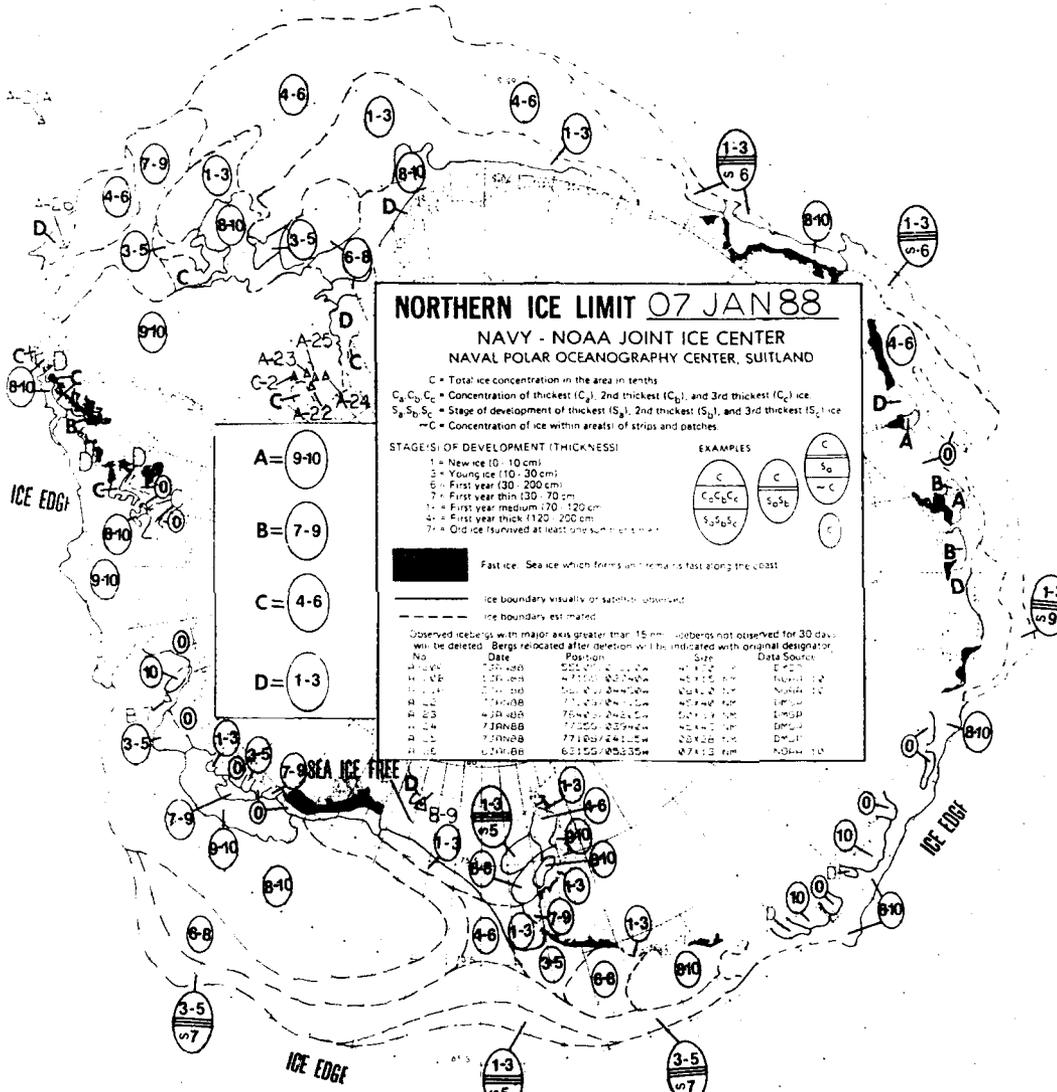
Area	Concentration	Stage	Thickness
1	10	1	10-100
2	10	2	10-30
3	10	3	30-200
4	10	4	30-70
5	10	5	70-120
6	10	6	120-225
7	10	7	>225

A-20B

A-20A

ICE EDGE

SEA ICE FREE



NORTHERN ICE LIMIT 07 JAN 88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 -C = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (10 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year (30 - 200 cm)
- 4 = First year thin (30 - 70 cm)
- 5 = First year medium (70 - 120 cm)
- 6 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer)

EXAMPLES

C

C₁C₂C₃

S₁S₂S₃

C

S₁S₂

C

S₁

■ Fast ice - Sea ice which forms and remains fast along the coast
 --- Ice boundary visually or satellite observed
 - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 m. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
10-10	7 JAN 88	52° 00' N 142° 00' W	48 x 12 km	NSIC
10-11	7 JAN 88	47° 10' N 152° 30' W	48 x 12 km	NSIC
10-12	7 JAN 88	50° 00' N 140° 00' W	24 x 12 km	NSIC
10-13	7 JAN 88	71° 00' N 150° 00' W	48 x 12 km	NSIC
10-14	7 JAN 88	71° 00' N 150° 00' W	48 x 12 km	NSIC
10-15	7 JAN 88	77° 00' N 150° 00' W	24 x 12 km	NSIC
10-16	7 JAN 88	77° 00' N 150° 00' W	24 x 12 km	NSIC
10-17	7 JAN 88	62° 00' N 153° 00' W	48 x 12 km	NSIC

No.	Date	Position	Size	Data Source
10-18	7 JAN 88	77° 00' N 150° 00' W	24 x 12 km	NSIC
10-19	7 JAN 88	77° 00' N 150° 00' W	24 x 12 km	NSIC
10-20	7 JAN 88	77° 00' N 150° 00' W	24 x 12 km	NSIC

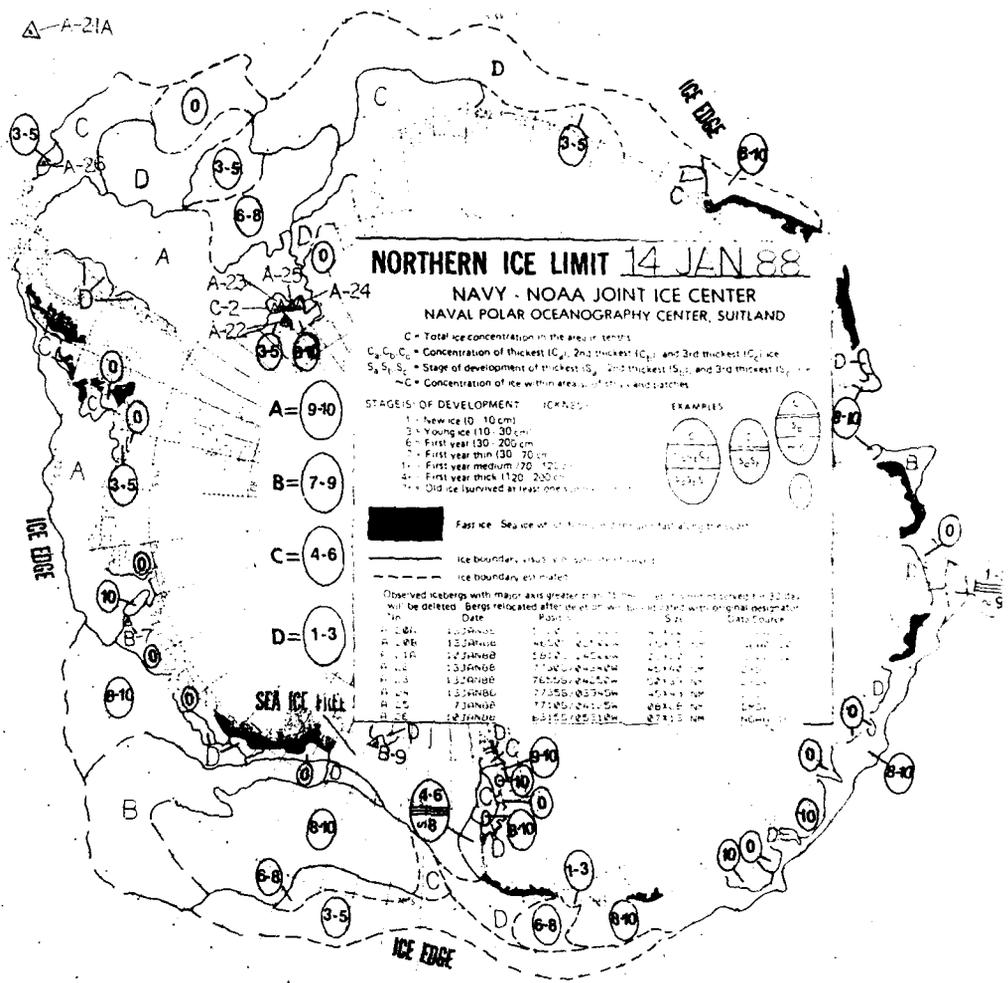
SEA ICE FREE

△-A-20B

△-A-20A

△-A-21A

SEA ICE FREE



SEA ICE FREE

ID	Date	Position	Size	Data Source
B-10	13 JAN 88	76.50N 152.50W	1000 x 1000	NOAA
B-9	13 JAN 88	76.50N 152.50W	1000 x 1000	NOAA
B-8	13 JAN 88	76.50N 152.50W	1000 x 1000	NOAA

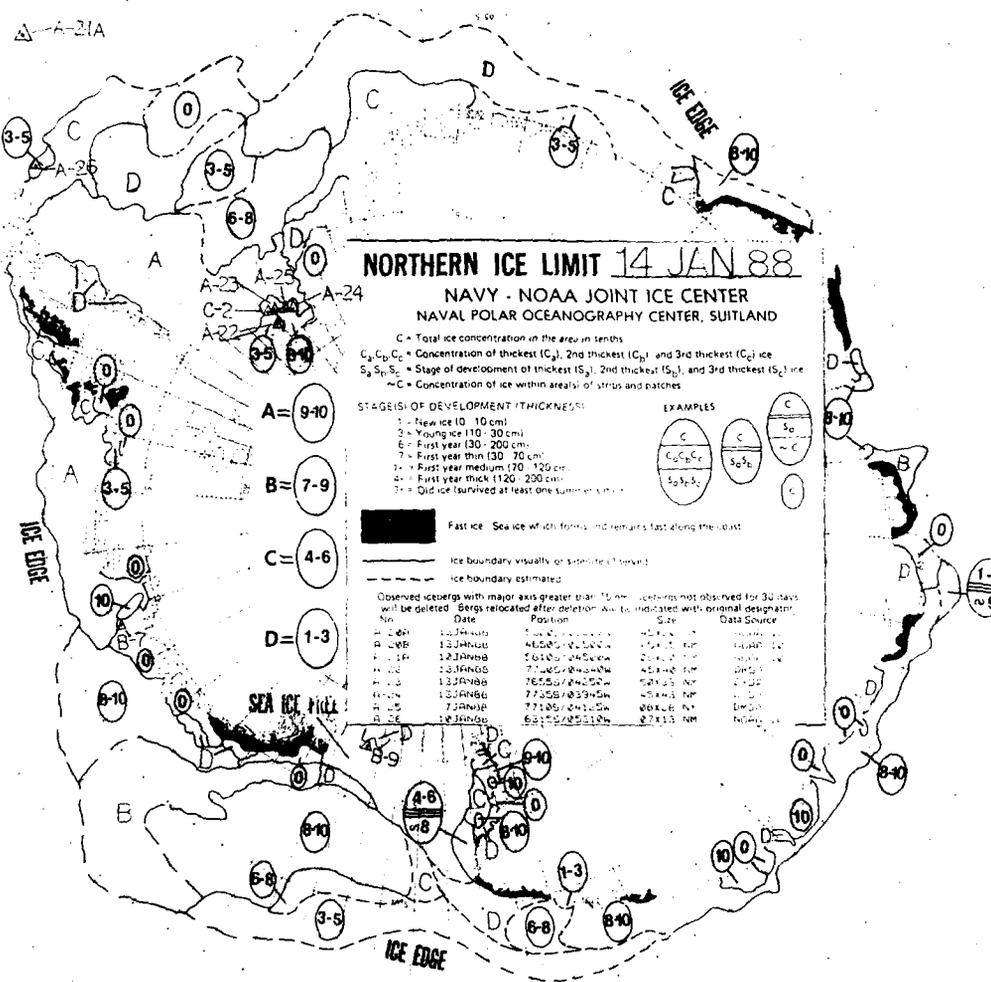
SEA ICE FREE

A-A-20B

A-A-20A

A-A-21A

SEA ICE FREE



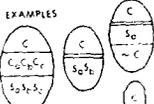
NORTHERN ICE LIMIT 14 JAN 88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 -C = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 8 = First year medium (70 - 100 cm)
- 9 = First year thick (100 - 200 cm)
- 10 = Old ice (survived at least one summer)



- A = 9-10
- B = 7-9
- C = 4-6
- D = 1-3

Fast ice - Sea ice which forms and remains fast along the coast

Ice boundary visually or satellite derived

Ice boundary estimated

Observed icebergs with major axis greater than 15 m (icebergs not observed for 30 days will be deleted). Bergs relocated after deletion. A-1 is indicated with original designator.

No.	Date	Position	Size	Data Source
A-10	13 JAN 88	75°00'N 150°00'W	100 x 100 m	NOAA
A-11	13 JAN 88	75°00'N 150°00'W	100 x 100 m	NOAA
A-12	13 JAN 88	75°00'N 150°00'W	100 x 100 m	NOAA
A-13	13 JAN 88	75°00'N 150°00'W	100 x 100 m	NOAA
A-14	13 JAN 88	75°00'N 150°00'W	100 x 100 m	NOAA
A-15	13 JAN 88	75°00'N 150°00'W	100 x 100 m	NOAA
A-16	13 JAN 88	75°00'N 150°00'W	100 x 100 m	NOAA

No.	Date	Position	Size	Data Source
B-1	13 JAN 88	75°00'N 150°00'W	15 x 20 m	NOAA
B-2	13 JAN 88	75°00'N 150°00'W	30 x 40 m	NOAA
B-3	13 JAN 88	75°00'N 150°00'W	40 x 50 m	NOAA

SEA ICE FREE

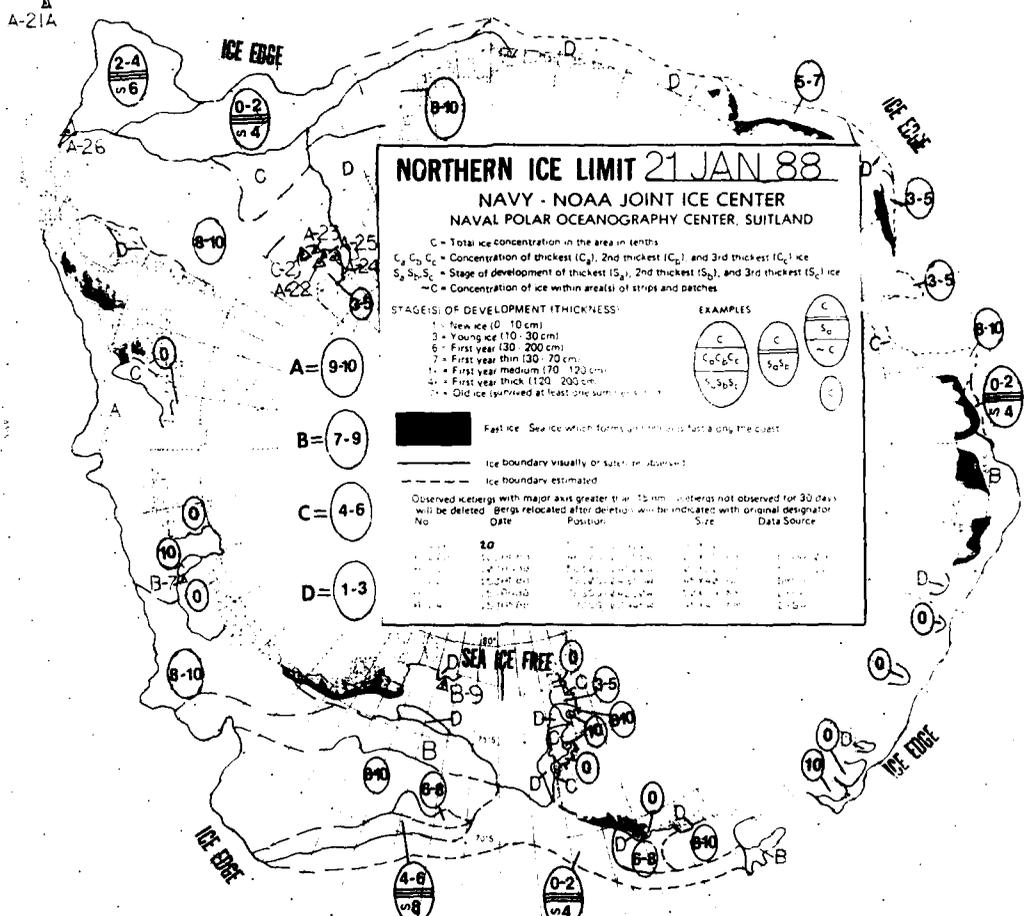
A
A-20B

A
A-20A

SEA ICE FREE

A
A-21A

SEA ICE FREE



NORTHERN ICE LIMIT 21 JAN 88
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁ C₂ C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁ S₂ S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 -C = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS)

- 1 - New ice (0 - 10 cm)
- 3 - Young ice (10 - 30 cm)
- 6 - First year thin (30 - 200 cm)
- 7 - First year thin (30 - 70 cm)
- 8 - First year medium (70 - 120 cm)
- 9 - First year thick (120 - 200 cm)
- 10 - Old ice (survived at least one summer)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$ $\frac{C}{S_1 S_2 S_3}$ $\frac{C}{S_1}$
 $\frac{C}{S_1 S_2}$ $\frac{C}{S_1 S_2 S_3}$ $\frac{C}{S_1 S_2}$

Fast ice - Sea ice which forms and remains fast along the coast
 - - - - - Ice boundary visually or satellite determined
 - - - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
10	21 JAN 88	75° 15' N 150° 00' W	100 x 100	NOAA-IP
11	21 JAN 88	75° 10' N 150° 05' W	120 x 120	NOAA-IP
12	21 JAN 88	75° 05' N 150° 10' W	140 x 140	NOAA-IP
13	21 JAN 88	75° 00' N 150° 15' W	160 x 160	NOAA-IP
14	21 JAN 88	74° 55' N 150° 20' W	180 x 180	NOAA-IP
15	21 JAN 88	74° 50' N 150° 25' W	200 x 200	NOAA-IP
16	21 JAN 88	74° 45' N 150° 30' W	220 x 220	NOAA-IP
17	21 JAN 88	74° 40' N 150° 35' W	240 x 240	NOAA-IP
18	21 JAN 88	74° 35' N 150° 40' W	260 x 260	NOAA-IP
19	21 JAN 88	74° 30' N 150° 45' W	280 x 280	NOAA-IP
20	21 JAN 88	74° 25' N 150° 50' W	300 x 300	NOAA-IP

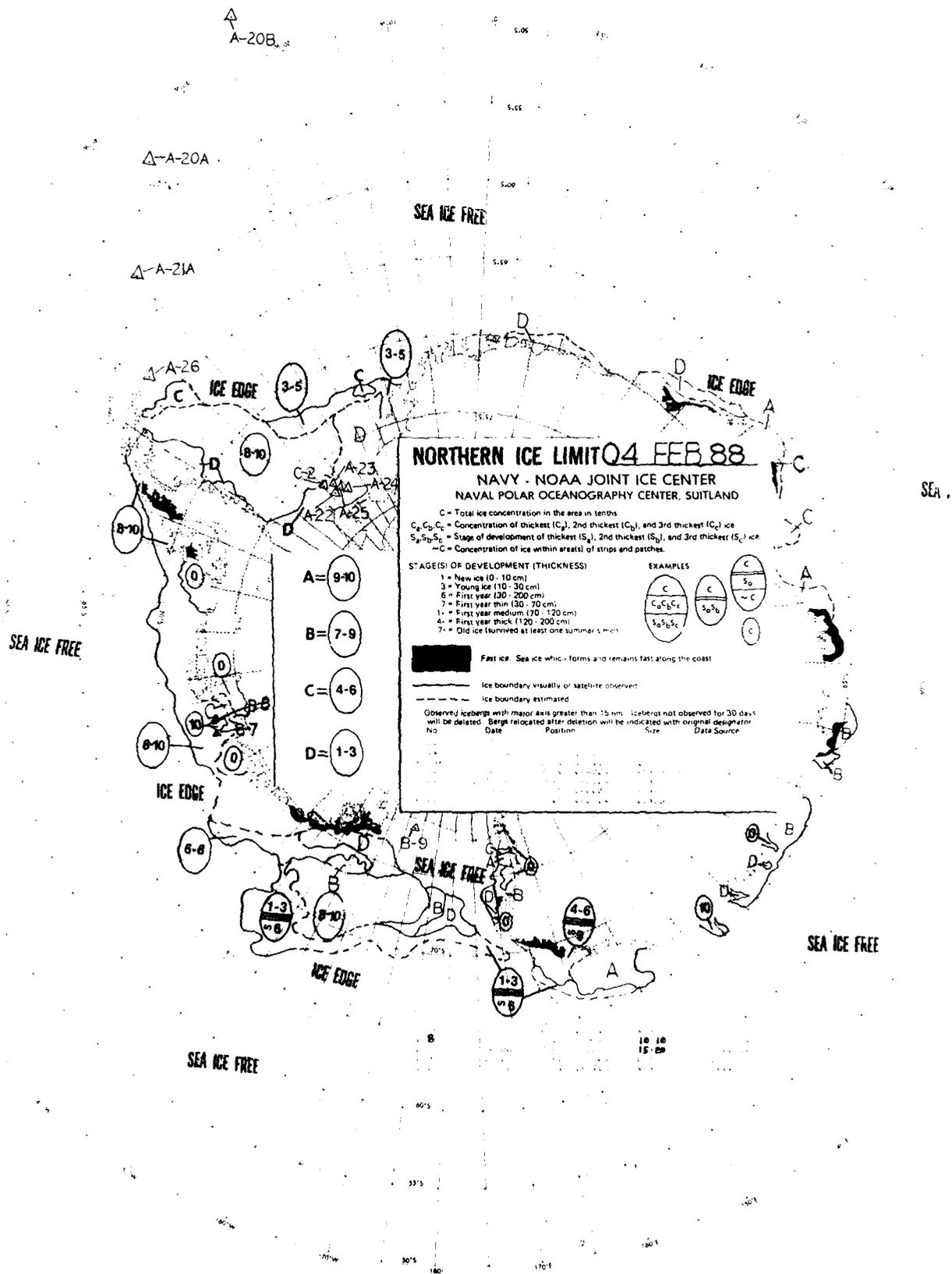
SEA ICE FREE

65°

55°

50°

NOAA-IP



A-20B

A-20A

SEA ICE FREE

NORTHERN ICE LIMIT 11 FEB '88

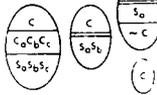
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
-C = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS):

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year thin (30 - 70 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer melt)

EXAMPLES



Fast ice. Sea ice which forms and remains fast along the coast

— Ice boundary visually or satellite observed

- - - Ice boundary estimated

Observed icebergs with major axis greater than 15 kilometers not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
8	19 10			
	15 20			

SEA ICE FREE

SEA ICE FREE

SEA ICE FREE

ICE EDGE

ICE EDGE

ICE EDGE

ICEBERG LAST OBSERVED IN NAVY DATA IN OCTOBER 1978. IS APPARENTLY AROUND APPROXIMATELY 25 KM EAST OF POSITION WHERE IT WAS ALSO APPARENTLY OBSERVED FROM 1978 TO 1982.

ICEBERG REPORTS FROM SHIP W/ SIGNS EXPRESS

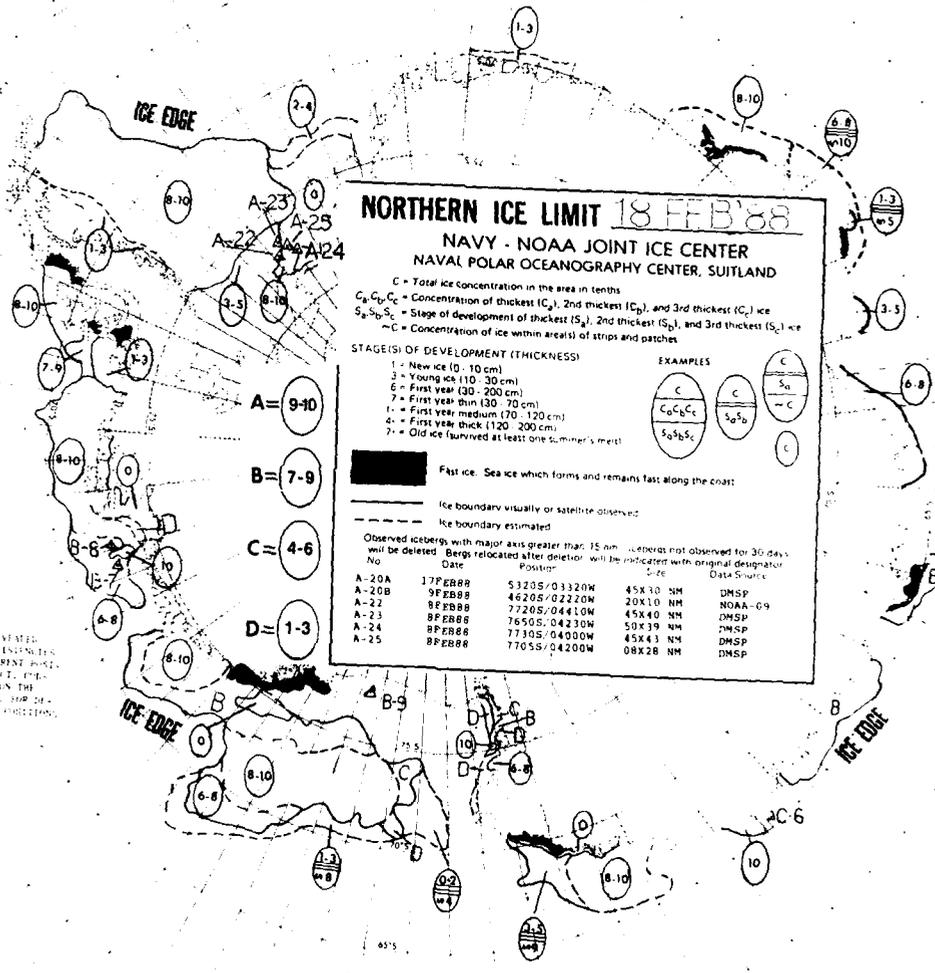
ICEBERG REPORTS FROM SHIP W/ SIGNS EXPRESS

50°S 180 170 E

A-20B

A-20A

SEA ICE FREE



NORTHERN ICE LIMIT 18 FEB 68
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 W = Concentration of ice within areas of strips and patches

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year (30 - 200 cm)
- 4 = First year thin (30 - 70 cm)
- 5 = First year medium (70 - 120 cm)
- 6 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$ $\frac{C}{S_1 S_2}$ $\frac{C}{S_1 S_2 S_3}$ $\frac{C}{W}$

Fast ice: Sea ice which forms and remains fast along the coast

— Ice boundary visually or satellite observed
 - - - Ice boundary estimated

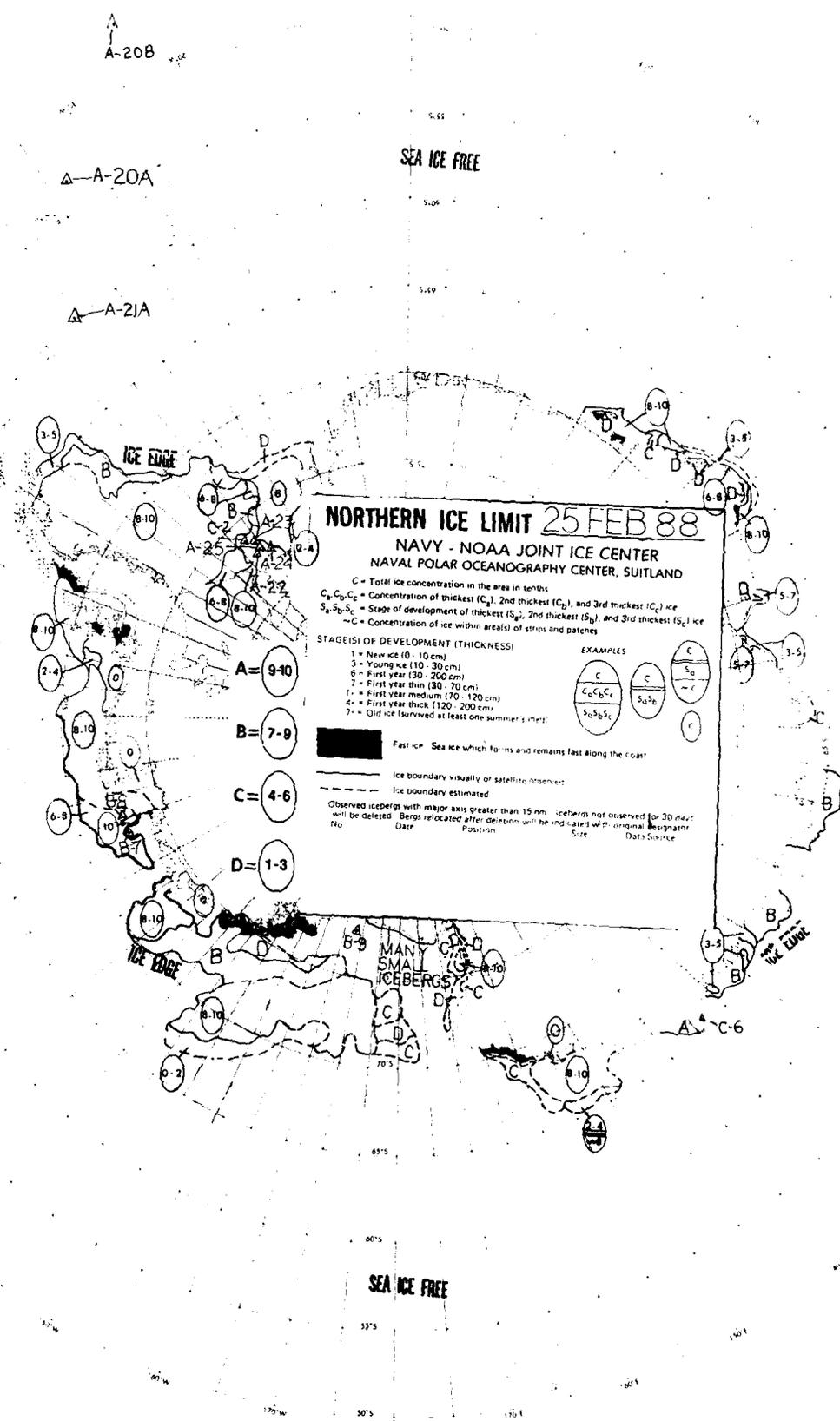
Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after detection will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20A	17 FEB 68	5320S/03320W	45X10 NM	DMSP
A-20B	9 FEB 68	4620S/02220W	20X10 NM	NOAA-09
A-22	8 FEB 68	7720S/04410W	45X40 NM	DMSP
A-23	8 FEB 68	7650S/04230W	50X39 NM	DMSP
A-24	8 FEB 68	7710S/04000W	45X43 NM	DMSP
A-25	8 FEB 68	7705S/04200W	08X28 NM	DMSP

THE SEARCH AREA HAS BEEN EXTENDED TO THE WEST AND SOUTH. THE SEARCH AREA IS CURRENTLY BEING MONITORED BY THE DMSP. THE SEARCH AREA IS CURRENTLY BEING MONITORED BY THE DMSP. THE SEARCH AREA IS CURRENTLY BEING MONITORED BY THE DMSP.

B-7	17 FEB 68	7245S/11241W	15X20 NM	NOAA-09
B-8	24 JAN 68	7105S/10930W	10X10 NM	NOAA-10
B-9	17 FEB 68	7735S/16655W	8X19 NM	NOAA-09
C-6	27 JAN 68	6520S/13330E	25X15 NM	DMSP

SEA ICE FREE



A-A-20B

A-A-20A

A-A-21A

SEA ICE FREE

SEA ICE FREE

NORTHERN ICE LIMIT 03 MAR 88

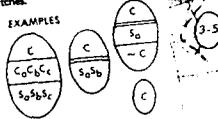
NAVY - NOAA JOINT ICE CENTER NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
 C = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (30 - 200 cm)
- 5 = First year (30 - 200 cm)
- 7 = First year thin (70 - 120 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



- A = 9-10
- B = 7-9
- C = 4-6
- D = 1-3

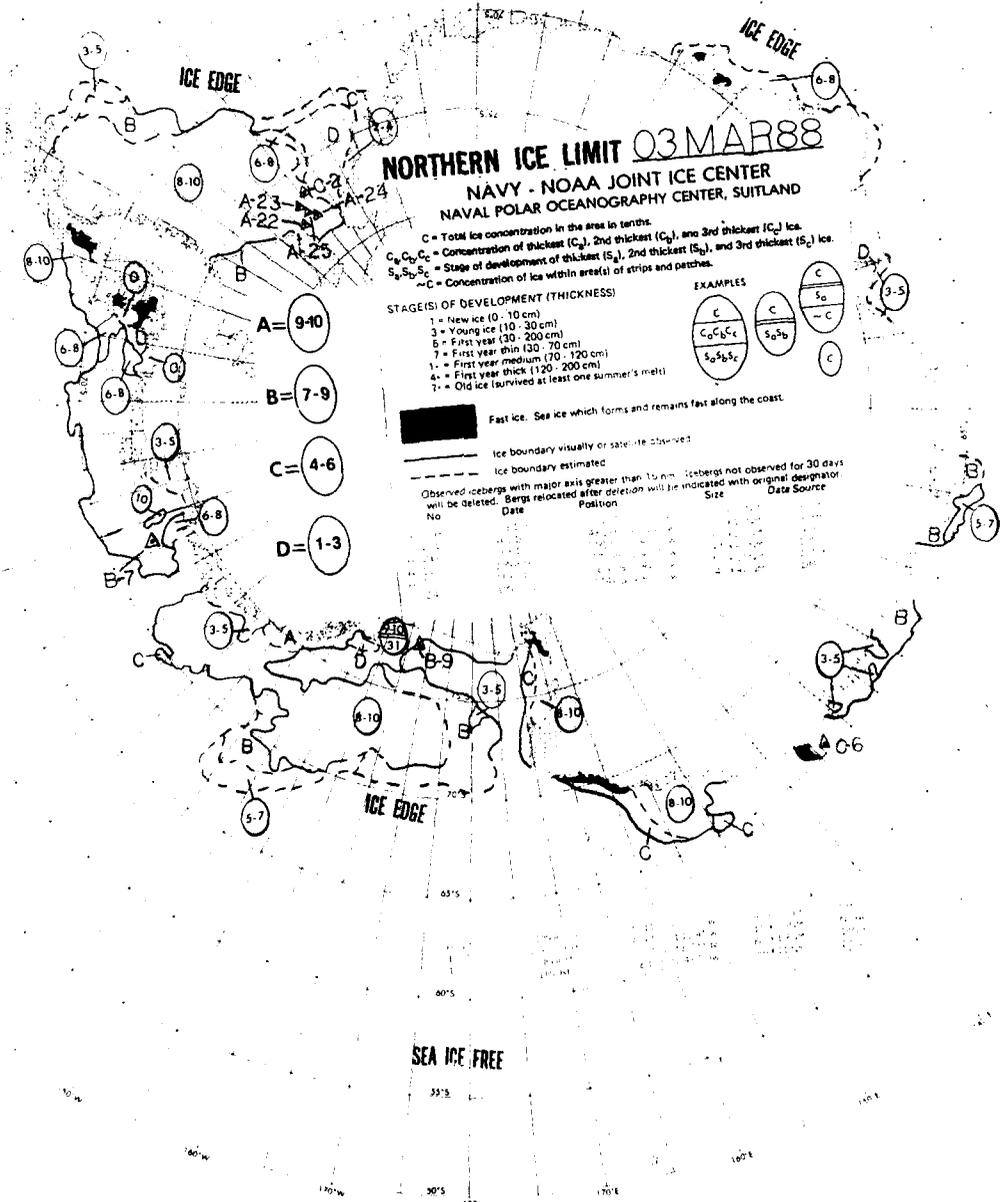
Fast ice. Sea ice which forms and remains fast along the coast.

Ice boundary visually or satellite observed.

Ice boundary estimated.

Observed icebergs with major axis greater than 15 m. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No	Date	Position	Size	Date Source
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SEA ICE FREE

▲ A-20B

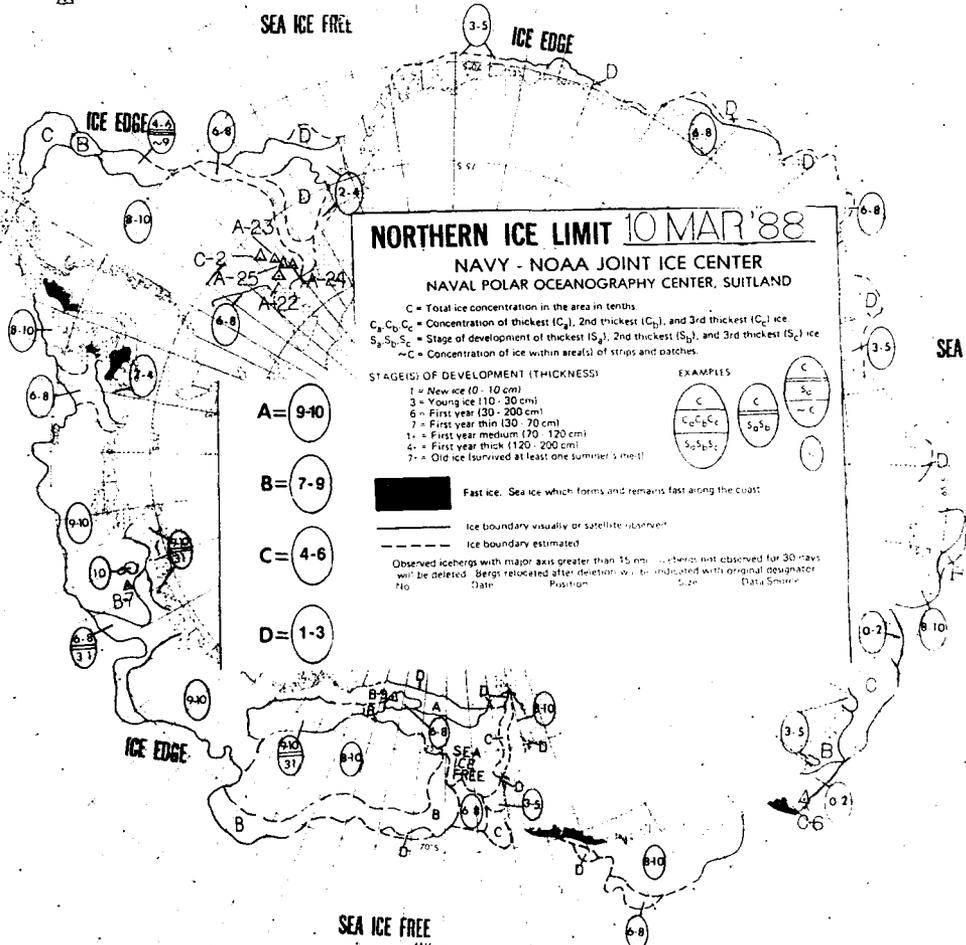
▲ A-20A

▲ A-21A

SEA ICE FREE

ICE EDGE

SEA ICE FREE



NORTHERN ICE LIMIT 10 MAR '88

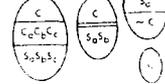
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



- A = 9-10
- B = 7-9
- C = 4-6
- D = 1-3

Fast ice: Sea ice which forms and remains fast along the coast

— Ice boundary visually or satellite observed
 - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 m, which were not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator No. Date Position Size Data Source

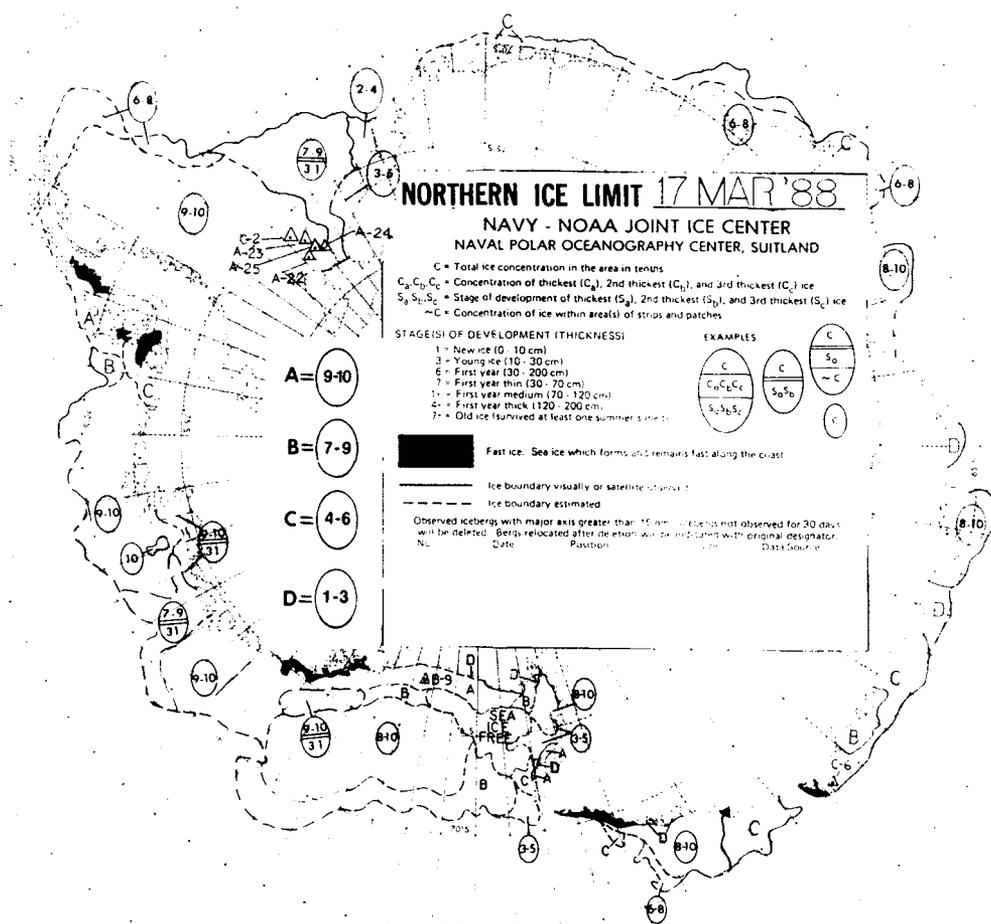
SEA ICE FREE

SEA ICE FREE

33°S
 50°S
 170°E

△-A-20A

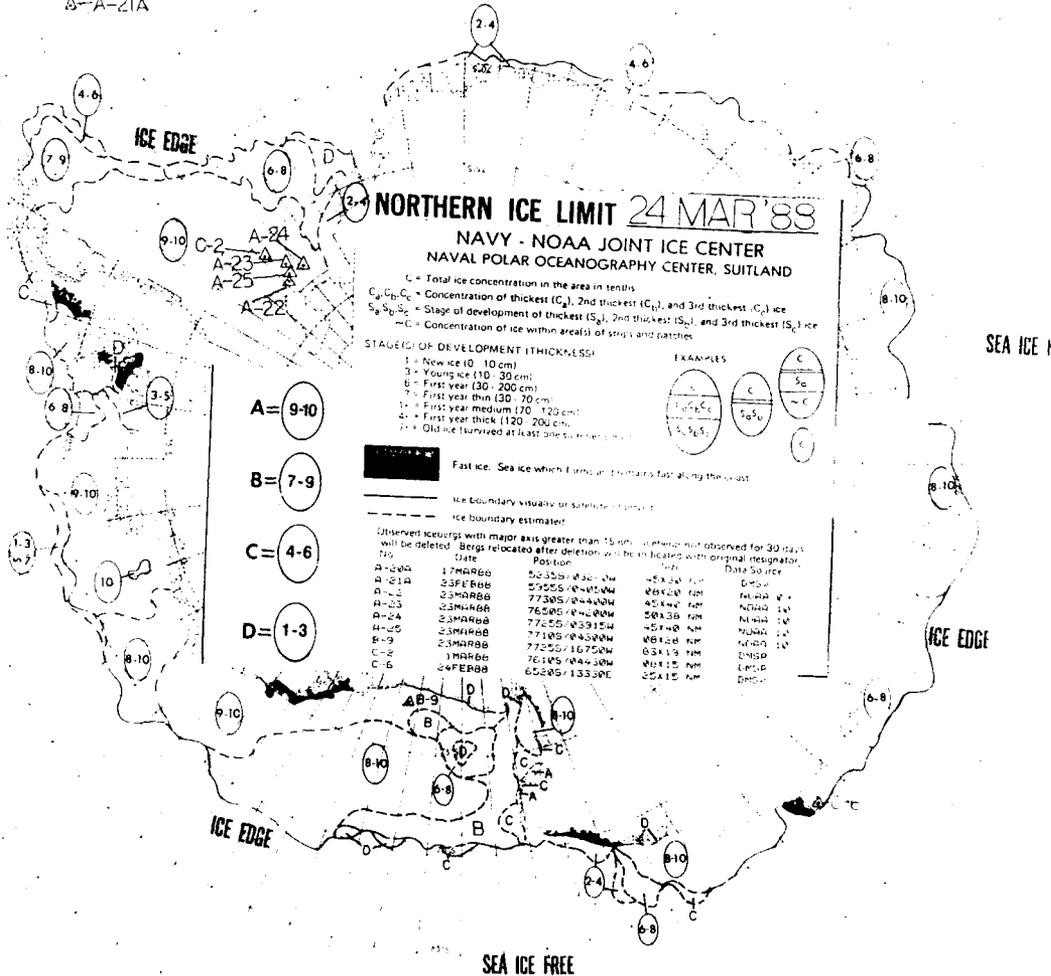
△-A-21A



Δ-A-20A

Δ-A-21A

SEA ICE FREE

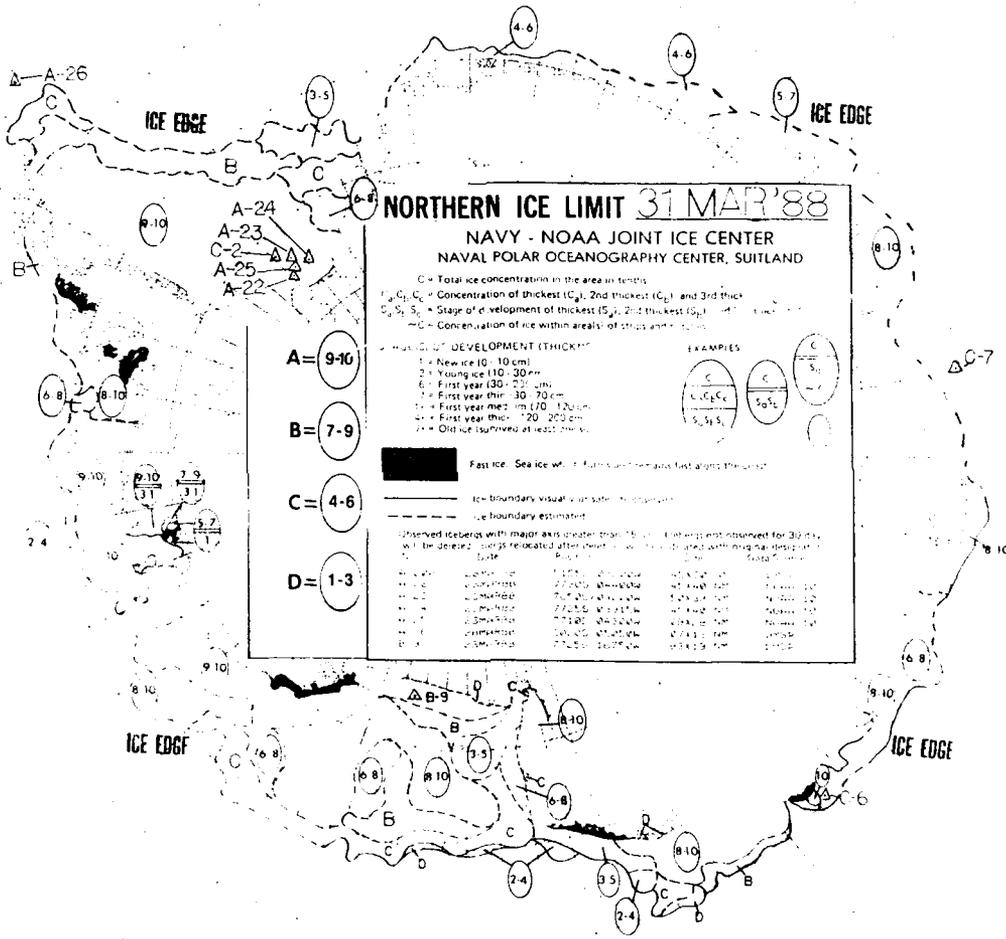


ICE FREE

SEA ICE FREE

Δ-A-20A

SEA ICE FREE

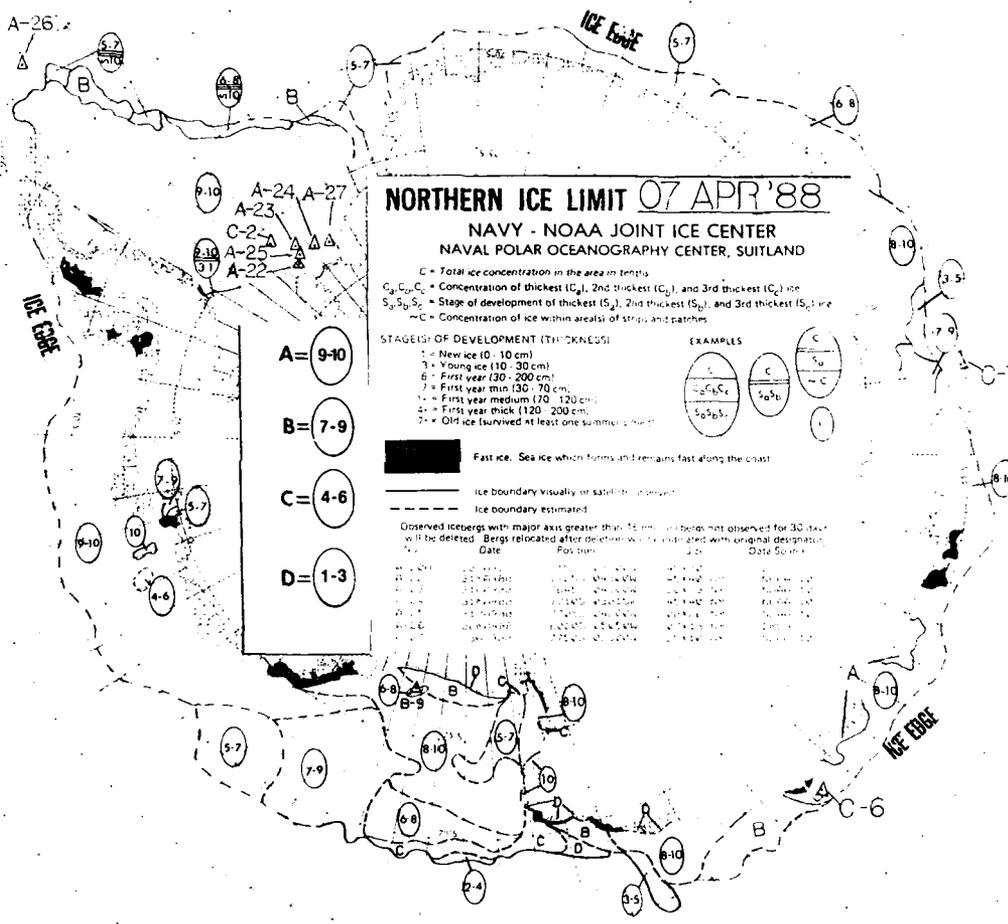


SEA ICE FREE

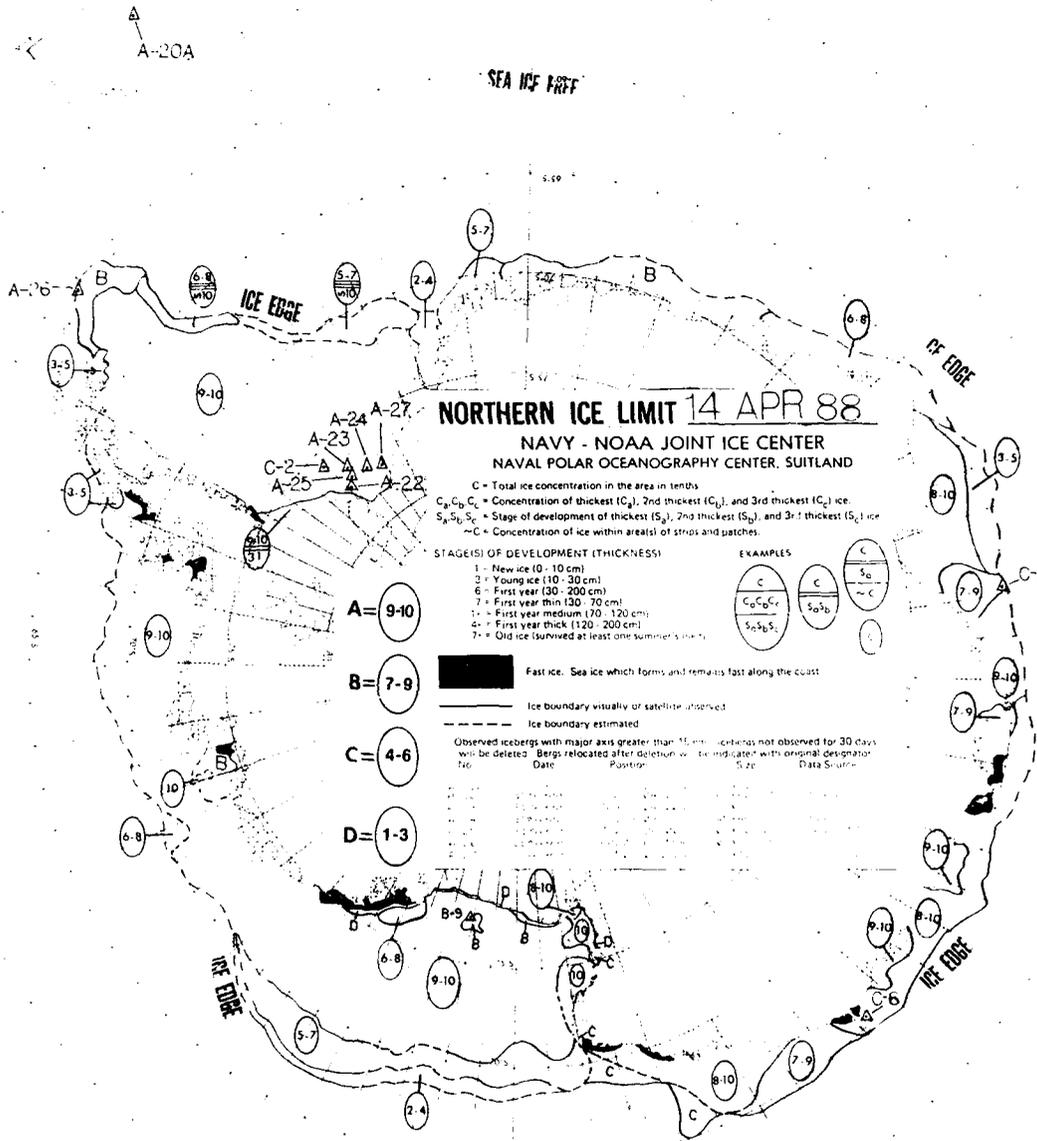
A—A-20A

SEA ICE FREE

THE SHELF PRACURED SOMETIME BETWEEN DEC 27 AND MAR 22



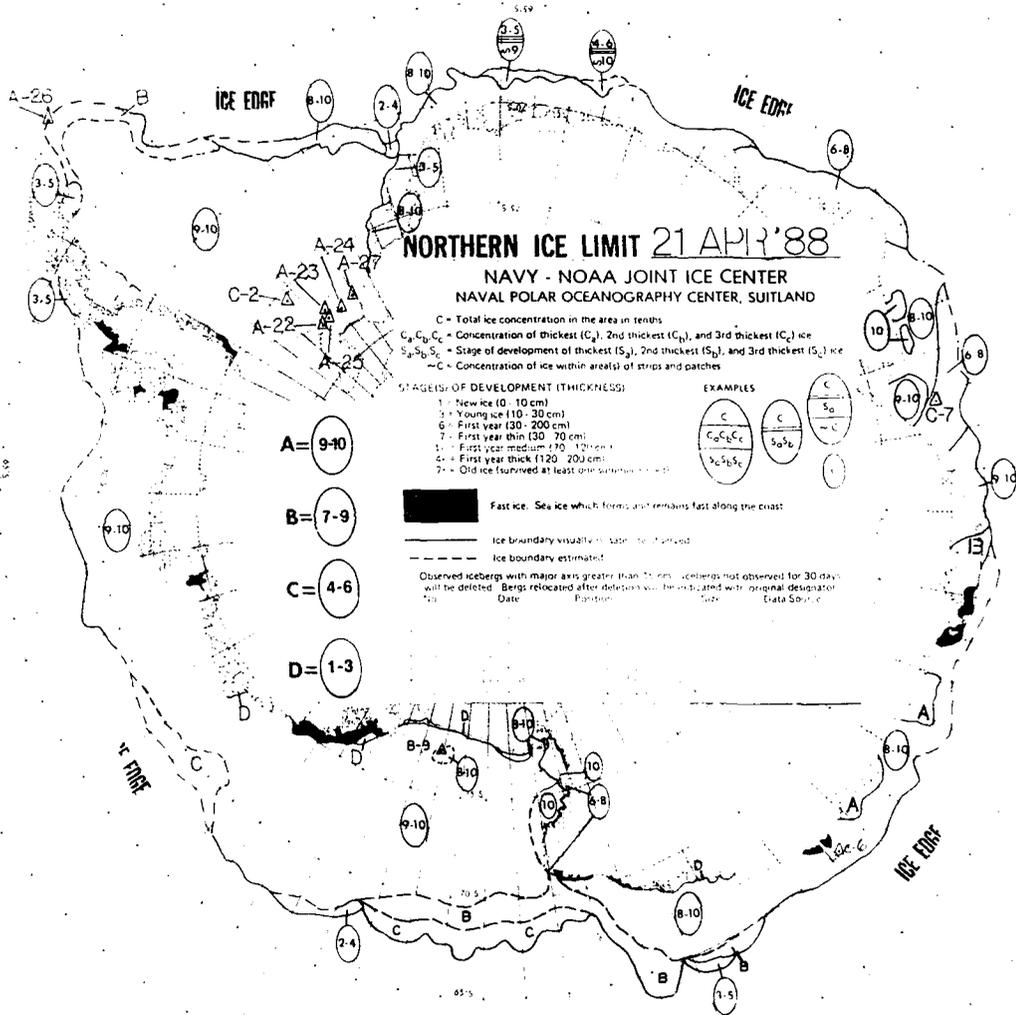
SEA ICE FREE



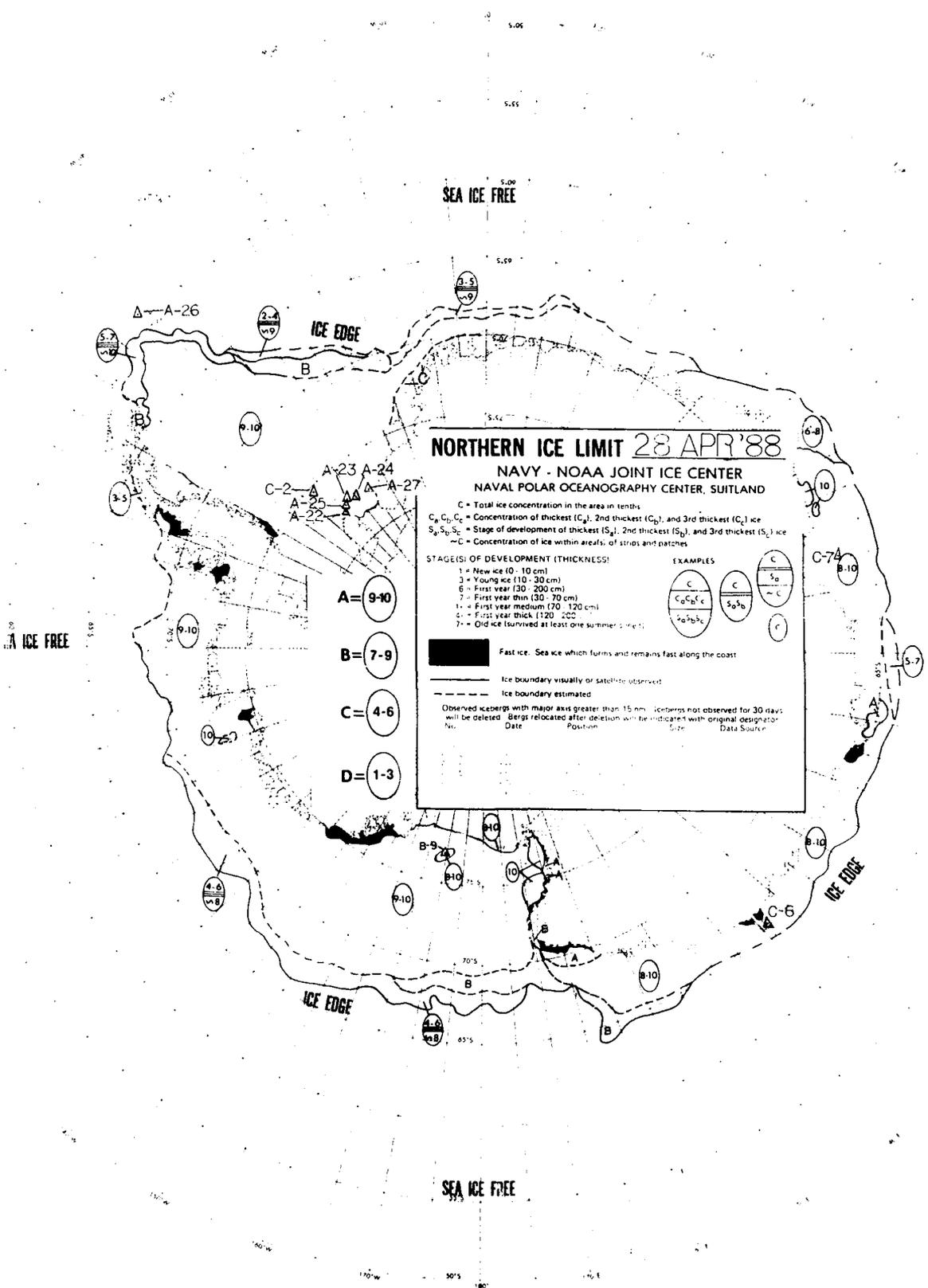
SEA ICE FREE

△-A-20A

SEA ICE FRONT



SEA ICE FRONT



SEA ICE FREE

NORTHERN ICE LIMIT 28 APR '88

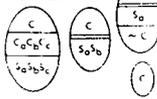
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice
 -C = Concentration of ice within areas, of strips and patches

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 11 = First year medium (70 - 120 cm)
- 12 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer melt)

EXAMPLES



Fast ice: Sea ice which forms and remains fast along the coast

Ice boundary visually or satellite observed

Ice boundary estimated

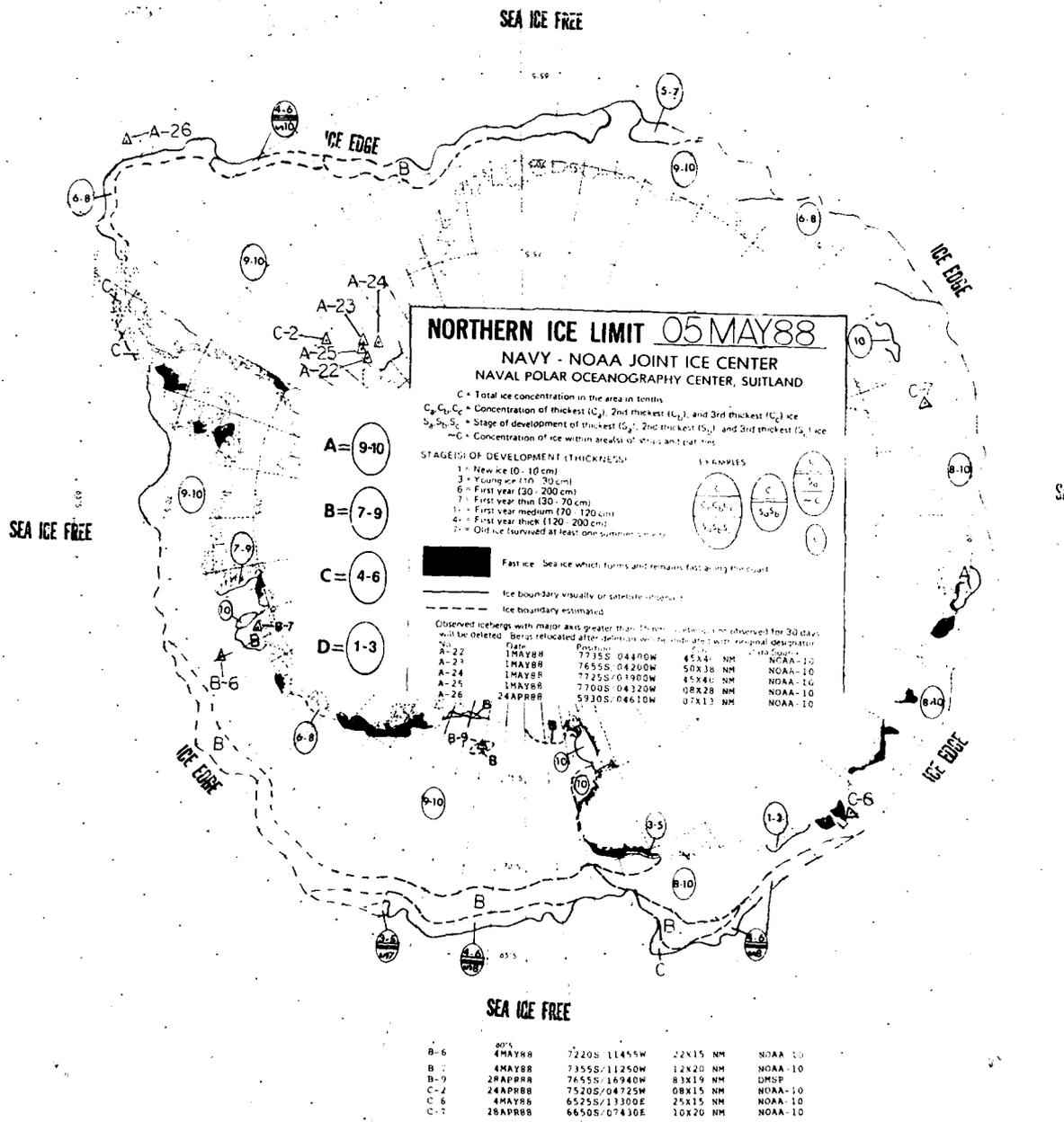
Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No. Date Position Size Data Source

- A = 9-10
- B = 7-9
- C = 4-6
- D = 1-3

SEA ICE FREE

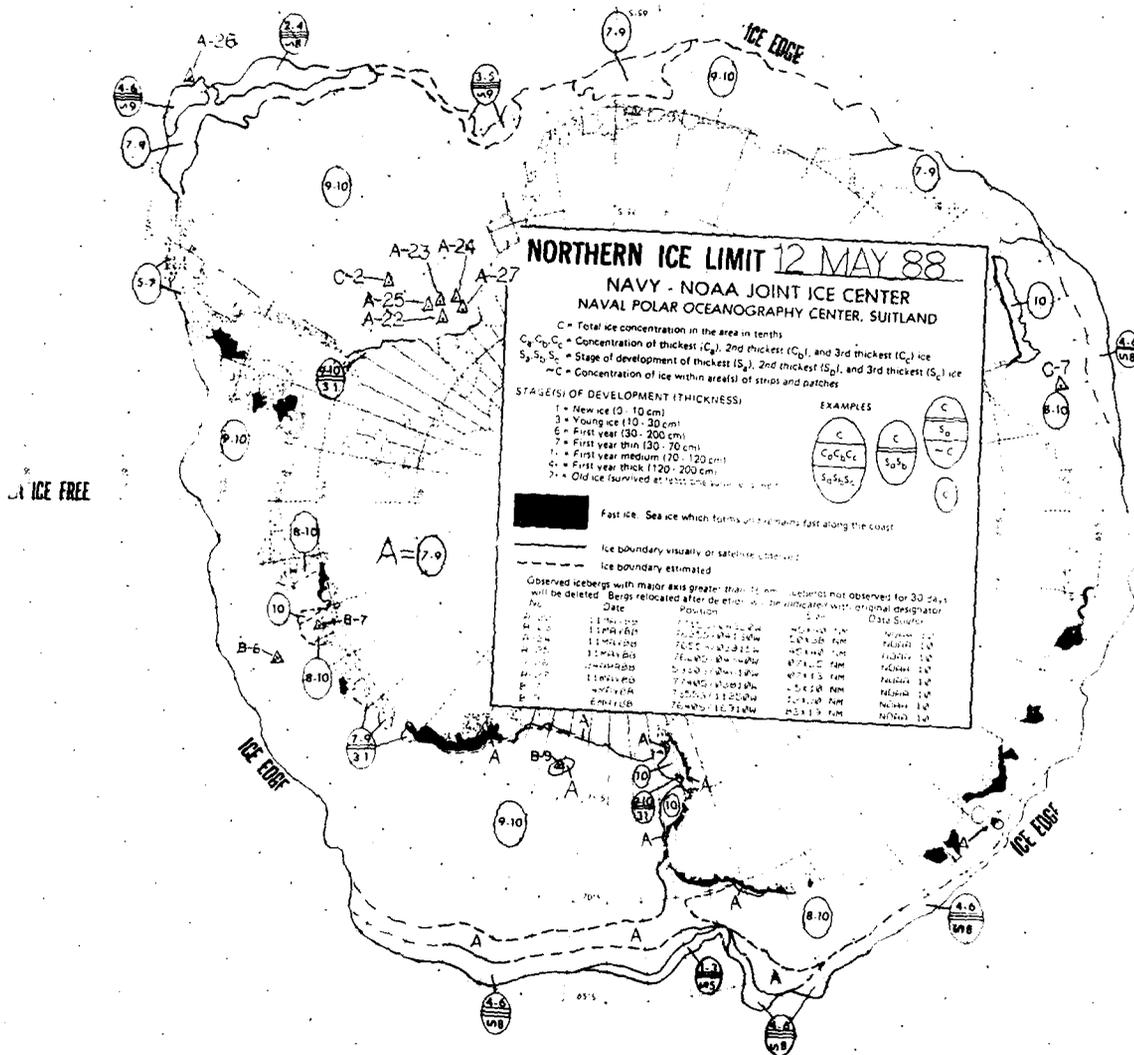
SEA ICE FREE



35'S

30'S

SEA ICE FREE



NORTHERN ICE LIMIT 12 MAY 88

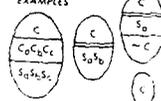
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice
 -C = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year (30 - 200 cm)
- 4 = First year thin (20 - 30 cm)
- 5 = First year medium (70 - 120 cm)
- 6 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one winter)

EXAMPLES



Fast ice: Sea ice which forms and remains fast along the coast

Ice boundary visually or satellite observed

Ice boundary estimated

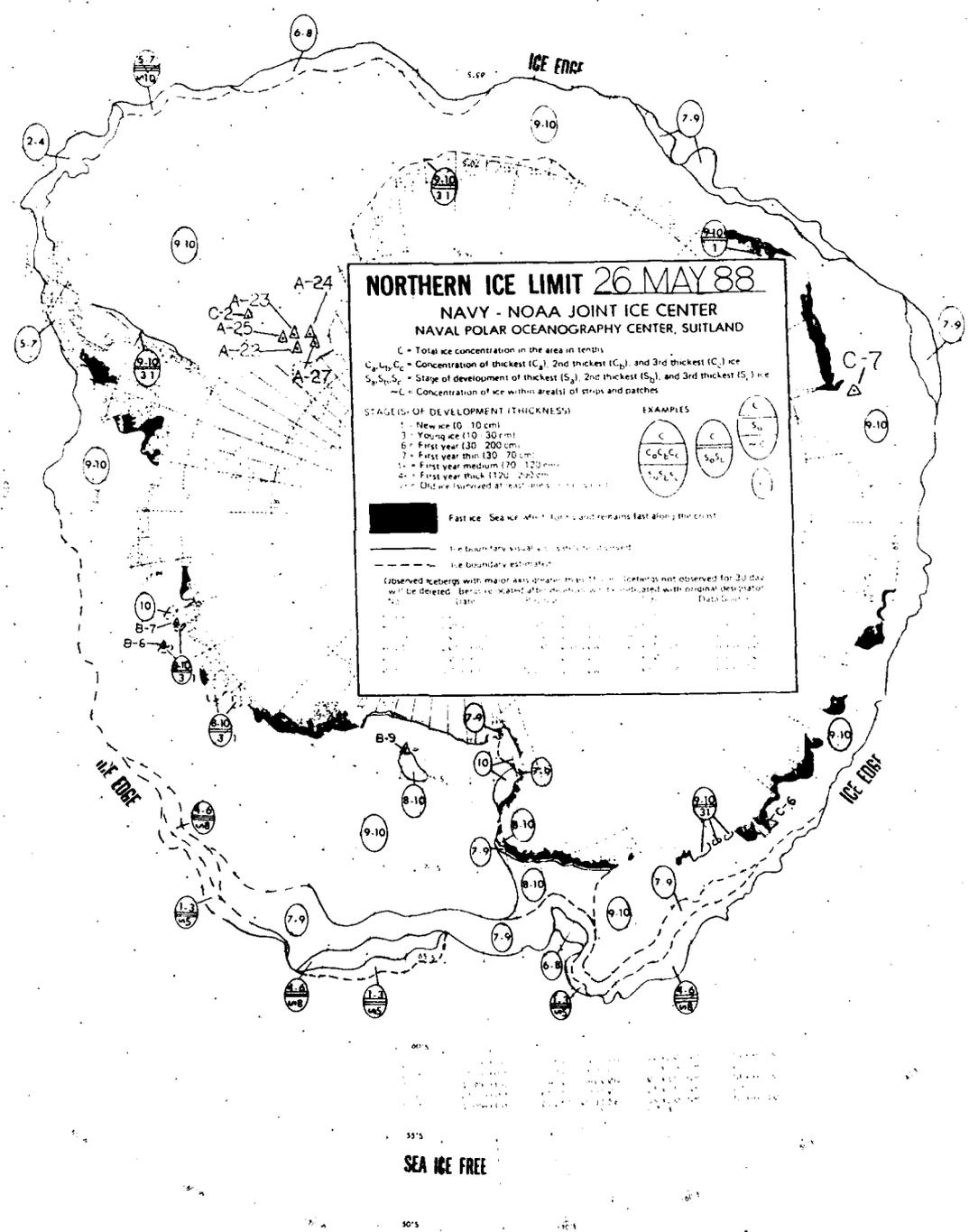
Observed icebergs with major axis greater than 10 m and not observed for 30 days will be deleted. Bergs relocated after deletion are indicated with original designator.

ID	Date	Position	Designator	Data Source
A-1	11 May 88	72°55'N 156°00'W	10000	NOAA
A-2	11 May 88	72°55'N 156°00'W	10000	NOAA
A-3	11 May 88	72°55'N 156°00'W	10000	NOAA
A-4	11 May 88	72°55'N 156°00'W	10000	NOAA
A-5	11 May 88	72°55'N 156°00'W	10000	NOAA
A-6	11 May 88	72°55'N 156°00'W	10000	NOAA
A-7	11 May 88	72°55'N 156°00'W	10000	NOAA
A-8	11 May 88	72°55'N 156°00'W	10000	NOAA
A-9	11 May 88	72°55'N 156°00'W	10000	NOAA
A-10	11 May 88	72°55'N 156°00'W	10000	NOAA
A-11	11 May 88	72°55'N 156°00'W	10000	NOAA
A-12	11 May 88	72°55'N 156°00'W	10000	NOAA
A-13	11 May 88	72°55'N 156°00'W	10000	NOAA
A-14	11 May 88	72°55'N 156°00'W	10000	NOAA
A-15	11 May 88	72°55'N 156°00'W	10000	NOAA
A-16	11 May 88	72°55'N 156°00'W	10000	NOAA
A-17	11 May 88	72°55'N 156°00'W	10000	NOAA
A-18	11 May 88	72°55'N 156°00'W	10000	NOAA
A-19	11 May 88	72°55'N 156°00'W	10000	NOAA
A-20	11 May 88	72°55'N 156°00'W	10000	NOAA
A-21	11 May 88	72°55'N 156°00'W	10000	NOAA
A-22	11 May 88	72°55'N 156°00'W	10000	NOAA
A-23	11 May 88	72°55'N 156°00'W	10000	NOAA
A-24	11 May 88	72°55'N 156°00'W	10000	NOAA
A-25	11 May 88	72°55'N 156°00'W	10000	NOAA
A-26	11 May 88	72°55'N 156°00'W	10000	NOAA
A-27	11 May 88	72°55'N 156°00'W	10000	NOAA
A-28	11 May 88	72°55'N 156°00'W	10000	NOAA
A-29	11 May 88	72°55'N 156°00'W	10000	NOAA
A-30	11 May 88	72°55'N 156°00'W	10000	NOAA
A-31	11 May 88	72°55'N 156°00'W	10000	NOAA
A-32	11 May 88	72°55'N 156°00'W	10000	NOAA
A-33	11 May 88	72°55'N 156°00'W	10000	NOAA
A-34	11 May 88	72°55'N 156°00'W	10000	NOAA
A-35	11 May 88	72°55'N 156°00'W	10000	NOAA
A-36	11 May 88	72°55'N 156°00'W	10000	NOAA
A-37	11 May 88	72°55'N 156°00'W	10000	NOAA
A-38	11 May 88	72°55'N 156°00'W	10000	NOAA
A-39	11 May 88	72°55'N 156°00'W	10000	NOAA
A-40	11 May 88	72°55'N 156°00'W	10000	NOAA
A-41	11 May 88	72°55'N 156°00'W	10000	NOAA
A-42	11 May 88	72°55'N 156°00'W	10000	NOAA
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A-69	11 May 88	72°55'N 156°00'W	10000	NOAA
A-70	11 May 88	72°55'N 156°00'W	10000	NOAA
A-71	11 May 88	72°55'N 156°00'W	10000	NOAA
A-72	11 May 88	72°55'N 156°00'W	10000	NOAA
A-73	11 May 88	72°55'N 156°00'W	10000	NOAA
A-74	11 May 88	72°55'N 156°00'W	10000	NOAA
A-75	11 May 88	72°55'N 156°00'W	10000	NOAA
A-76	11 May 88	72°55'N 156°00'W	10000	NOAA
A-77	11 May 88	72°55'N 156°00'W	10000	NOAA
A-78	11 May 88	72°55'N 156°00'W	10000	NOAA
A-79	11 May 88	72°55'N 156°00'W	10000	NOAA
A-80	11 May 88	72°55'N 156°00'W	10000	NOAA
A-81	11 May 88	72°55'N 156°00'W	10000	NOAA
A-82	11 May 88	72°55'N 156°00'W	10000	NOAA
A-83	11 May 88	72°55'N 156°00'W	10000	NOAA
A-84	11 May 88	72°55'N 156°00'W	10000	NOAA
A-85	11 May 88	72°55'N 156°00'W	10000	NOAA
A-86	11 May 88	72°55'N 156°00'W	10000	NOAA
A-87	11 May 88	72°55'N 156°00'W	10000	NOAA
A-88	11 May 88	72°55'N 156°00'W	10000	NOAA
A-89	11 May 88	72°55'N 156°00'W	10000	NOAA
A-90	11 May 88	72°55'N 156°00'W	10000	NOAA
A-91	11 May 88	72°55'N 156°00'W	10000	NOAA
A-92	11 May 88	72°55'N 156°00'W	10000	NOAA
A-93	11 May 88	72°55'N 156°00'W	10000	NOAA
A-94	11 May 88	72°55'N 156°00'W	10000	NOAA
A-95	11 May 88	72°55'N 156°00'W	10000	NOAA
A-96	11 May 88	72°55'N 156°00'W	10000	NOAA
A-97	11 May 88	72°55'N 156°00'W	10000	NOAA
A-98	11 May 88	72°55'N 156°00'W	10000	NOAA
A-99	11 May 88	72°55'N 156°00'W	10000	NOAA
A-100	11 May 88	72°55'N 156°00'W	10000	NOAA

SEA ICE FREE

51A 01 1111

5.00



SEA ICE FREE

SEA ICE FREE

ICE EDGE

NORTHERN ICE LIMIT 02 JUN '88

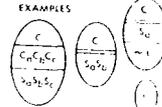
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
C = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year thin (30 - 70 cm)
- 4 = First year medium (70 - 120 cm)
- 5 = First year thick (120 - 230 cm)
- 6 = Old ice (survived at least one summer)

EXAMPLES

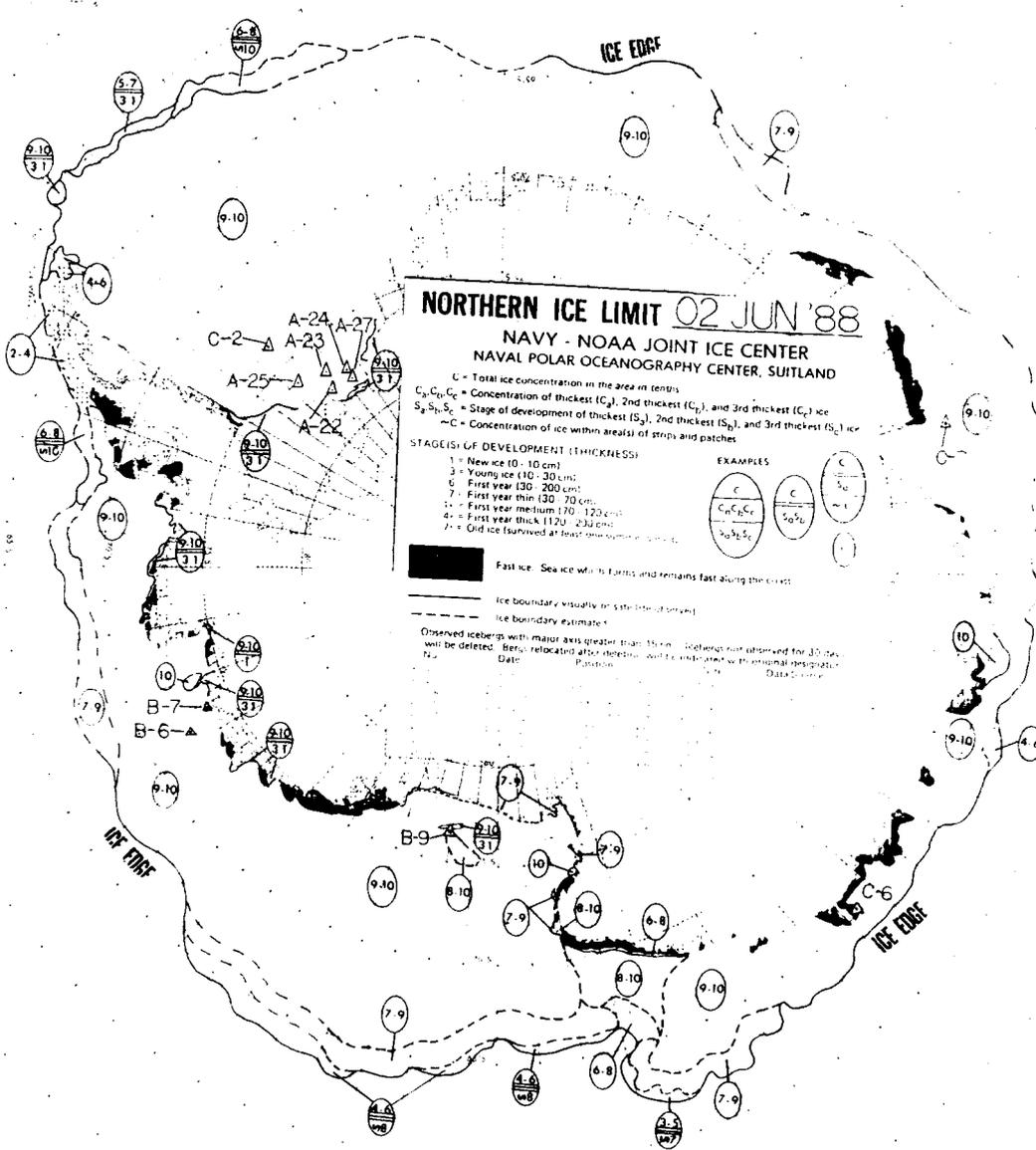


Fast ice: Sea ice which forms and remains fast along the coast

Ice boundary visually in satellite images

Ice boundary estimate

Observed icebergs with major axis greater than 15 cm (icebergs not observed for 30 days will be deleted). Icebergs relocated after departure will be indicated by the original designation. Date: Position: Data Source:



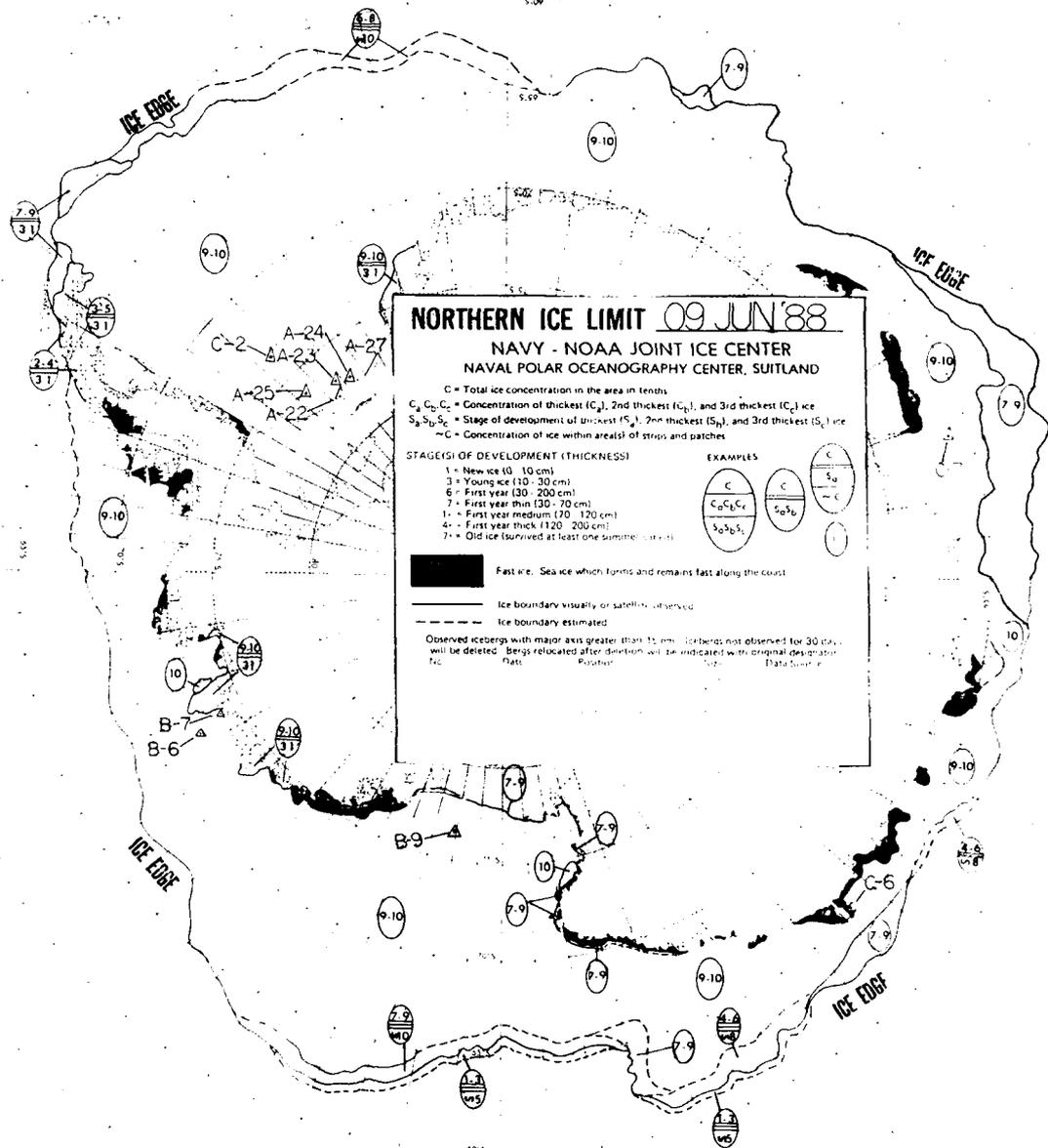
SEA ICE FREE

SEA ICE FREE

5.55

5.00

5.99



NORTHERN ICE LIMIT 09 JUN '88
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice
 -C = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 11 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$	$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{S_1}$	$\frac{C}{-C}$
$\frac{7}{6 6 6}$	$\frac{7}{6 6 6}$	$\frac{7}{6}$	$\frac{7}{-}$

Fast ice: Sea ice which forms and remains fast along the coast

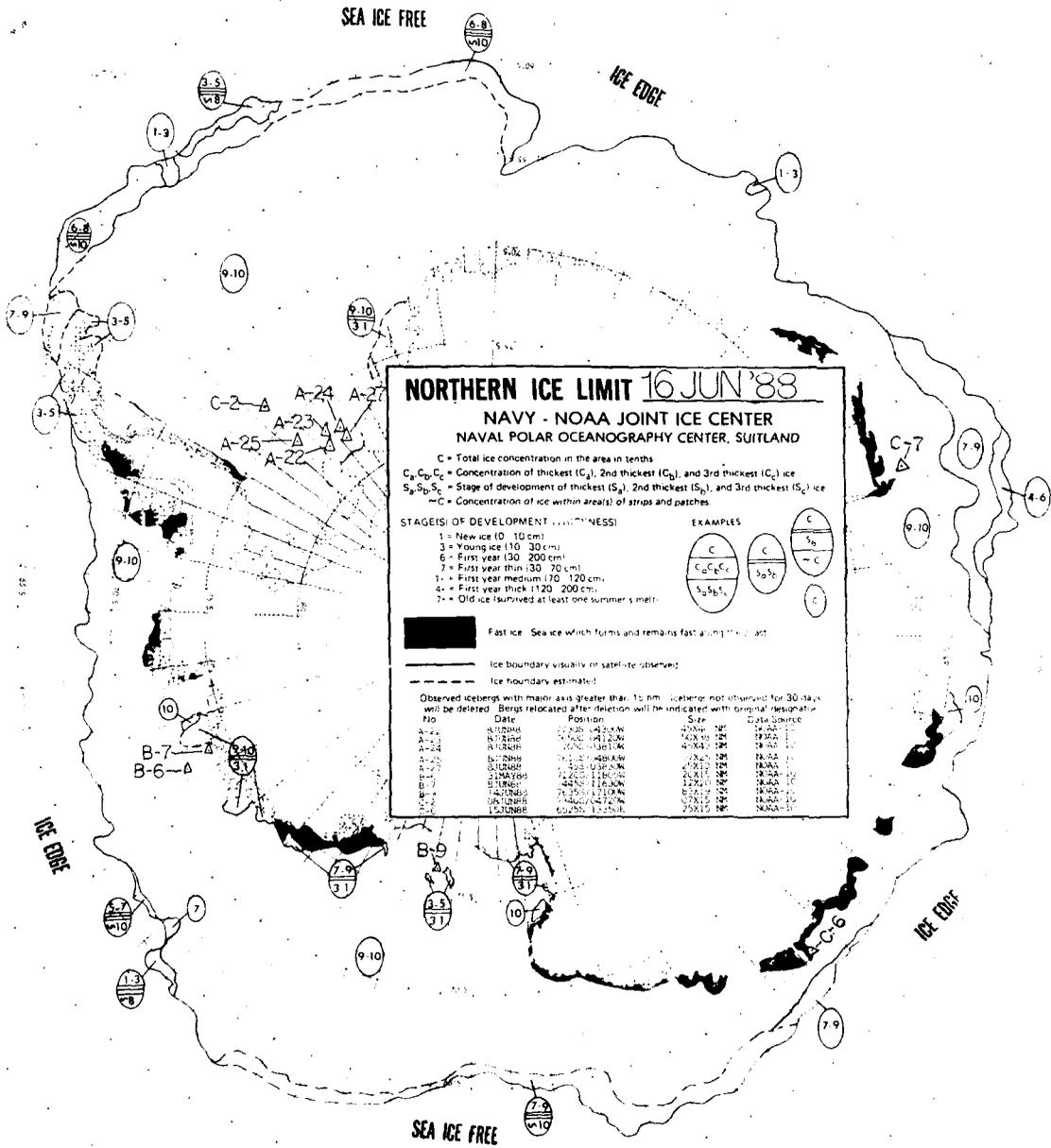
— Ice boundary visually or satellite observed
 - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 cm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designation.

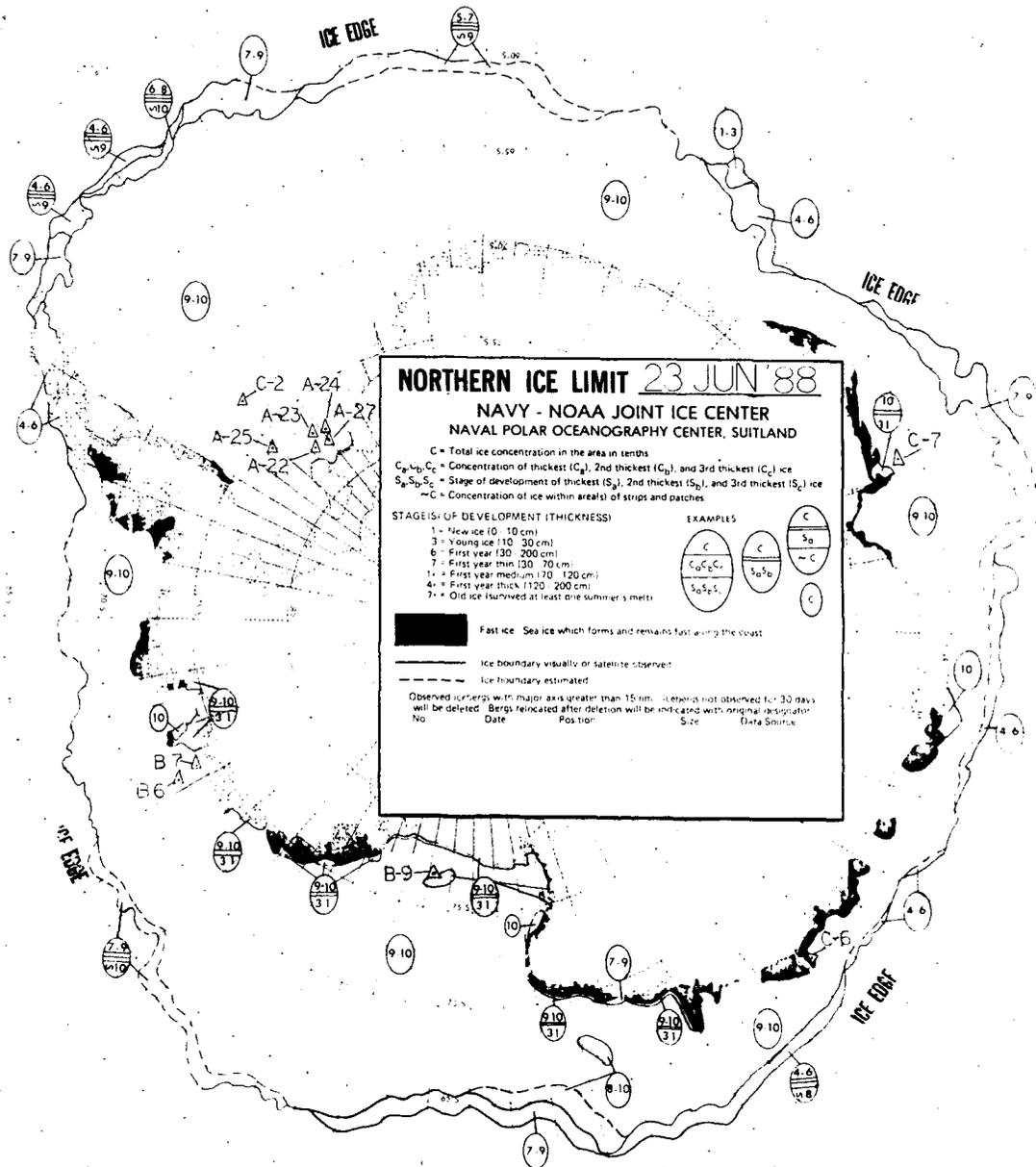
Plots: Position Date Source

SEA ICE FREE

5.55



SEA ICE FREE



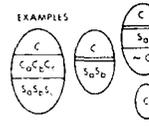
NORTHERN ICE LIMIT 23 JUN '88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

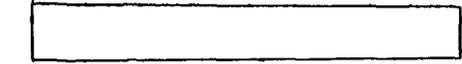
C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 A = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)



Fast ice - Sea ice which forms and remains fast along the coast
 Ice boundary visually or satellite observed
 Ice boundary estimated
 Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs indicated after deletion will be indicated with original designation.
 No. Date Pos. tr. Size Data Source



SEA ICE FREE

SEA ICE FREE

ICE EDGE

ICE EDGE

NORTHERN ICE LIMIT 30 JUN '88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 C = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS)

- 1 - New ice (0 - 10 cm)
- 2 - Young ice (10 - 25 cm)
- 3 - First year (25 - 50 cm)
- 4 - First year (50 - 75 cm)
- 5 - First year (75 - 100 cm)
- 6 - First year (100 - 125 cm)
- 7 - First year (125 - 150 cm)
- 8 - First year (150 - 200 cm)
- 9 - First year (200 - 250 cm)
- 10 - Old ice (250 cm or more)

EXAMPLE



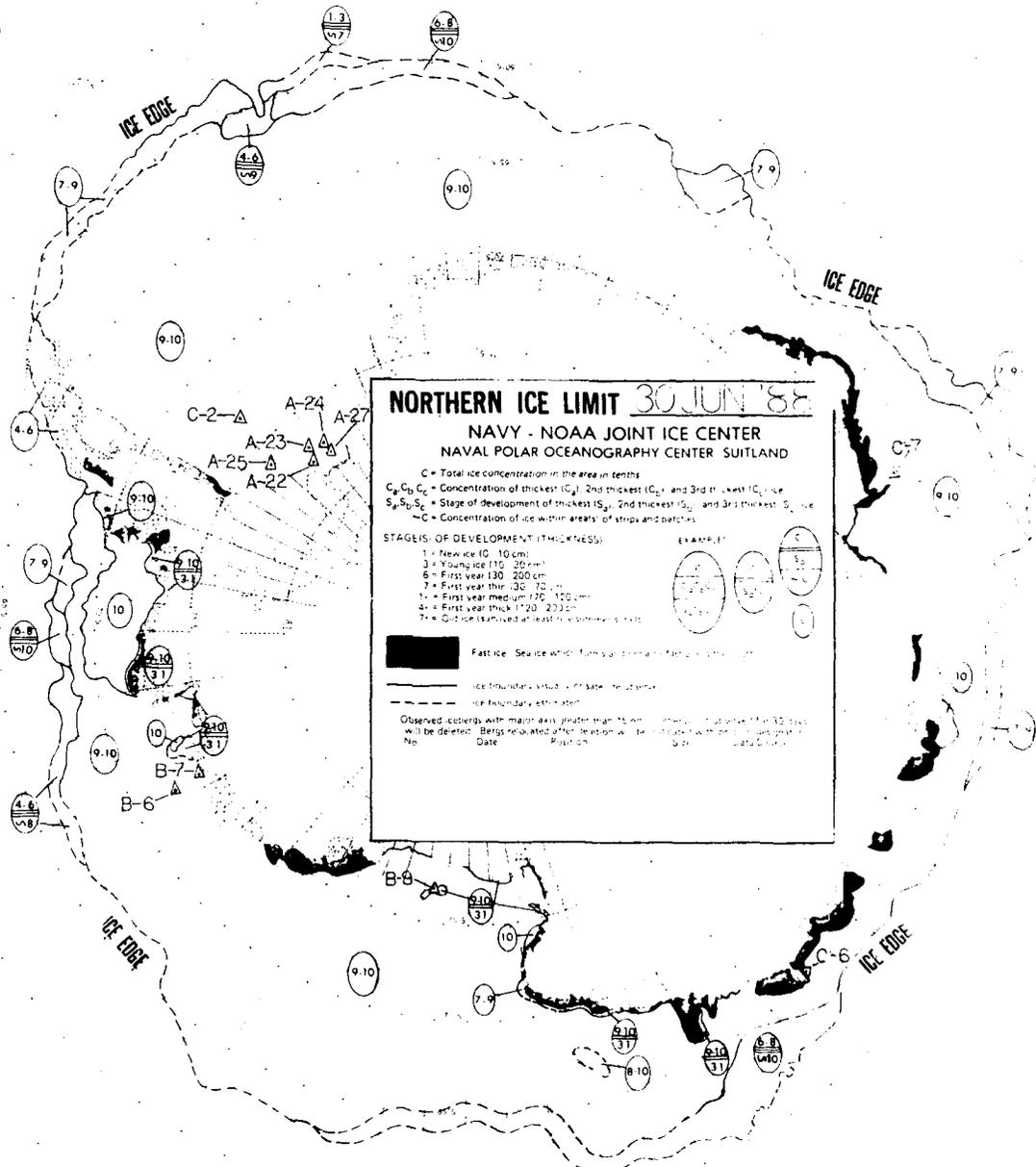
Fast ice: Sealed which forms on permanent ice cover

Ice boundary (with or without ice cover)

Ice boundary (estimated)

Observed centers with major axis greater than 15 will be plotted. Stations 17 and 32 may will be plotted. Bergees plotted after season as per code with the following information:

No. Date Position



SEA ICE FREE

ICE EDGE

SEA ICE FREE

ICE EDGE

ICE EDGE

NORTHERN ICE LIMIT 07 JUL 88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁C₂C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁S₂S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 -C = Concentration of ice within area(s) of strips and patches

STAGES OF DEVELOPMENT (THICKNESS)

- 1 - New ice (< 10 cm)
- 2 - Young ice (10 - 30 cm)
- 6 - First year (30 - 200 cm)
- 7 - First year thin (30 - 70 cm)
- 8 - First year medium (70 - 120 cm)
- 9 - First year thick (120 - 200 cm)
- 10 - Old ice (thickness of least one summer's melt)

EXAMPLES

C	C	C
C ₁ C ₂ C ₃	S ₁ S ₂ S ₃	-C

Fast ice - Sea ice which forms and remains fast all winter, past
 Ice boundary visually or satellite observed
 Ice boundary estimated

Observed icebergs with major axis greater than 15 m - centers will be plotted for 30 days
 will be deleted - bergs relocated after deletion will be indicated with original designation
 No. Date Position Size Data Source

No.	Date	Position	Size	Data Source
1	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
2	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
3	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
4	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
5	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
6	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
7	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
8	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
9	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
10	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10

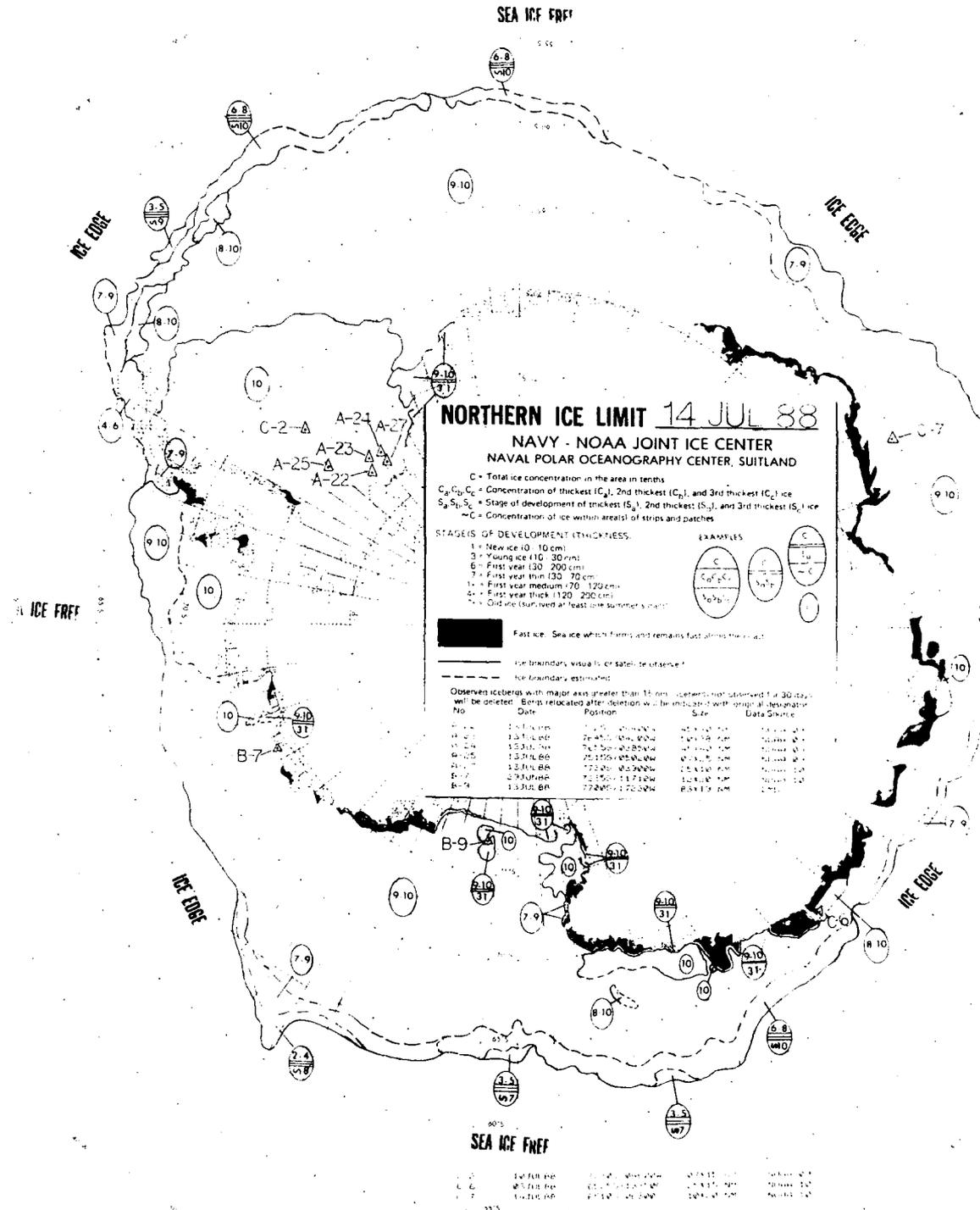
FREE

ICE EDGE

ICE EDGE

SEA ICE FREE

No.	Date	Position	Size	Data Source
1	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
2	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
3	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
4	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
5	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
6	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
7	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
8	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
9	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10
10	6 JUL 88	72 40N 157 00W	100m x 100m	NOAA 10



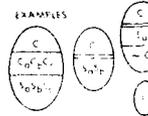
NORTHERN ICE LIMIT 14 JUL 88

NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 Δ = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS)

- 1 - New ice (0 - 10 cm)
- 2 - Young ice (10 - 30 cm)
- 3 - First year thin (30 - 200 cm)
- 4 - First year medium (70 - 120 cm)
- 5 - First year thick (120 - 200 cm)
- 6 - Old ice (survived at least one summer's melt)



Fast ice - Sea ice which forms and remains fast along the coast
 --- Ice boundary visible on satellite or otherwise
 - - - Ice boundary estimated

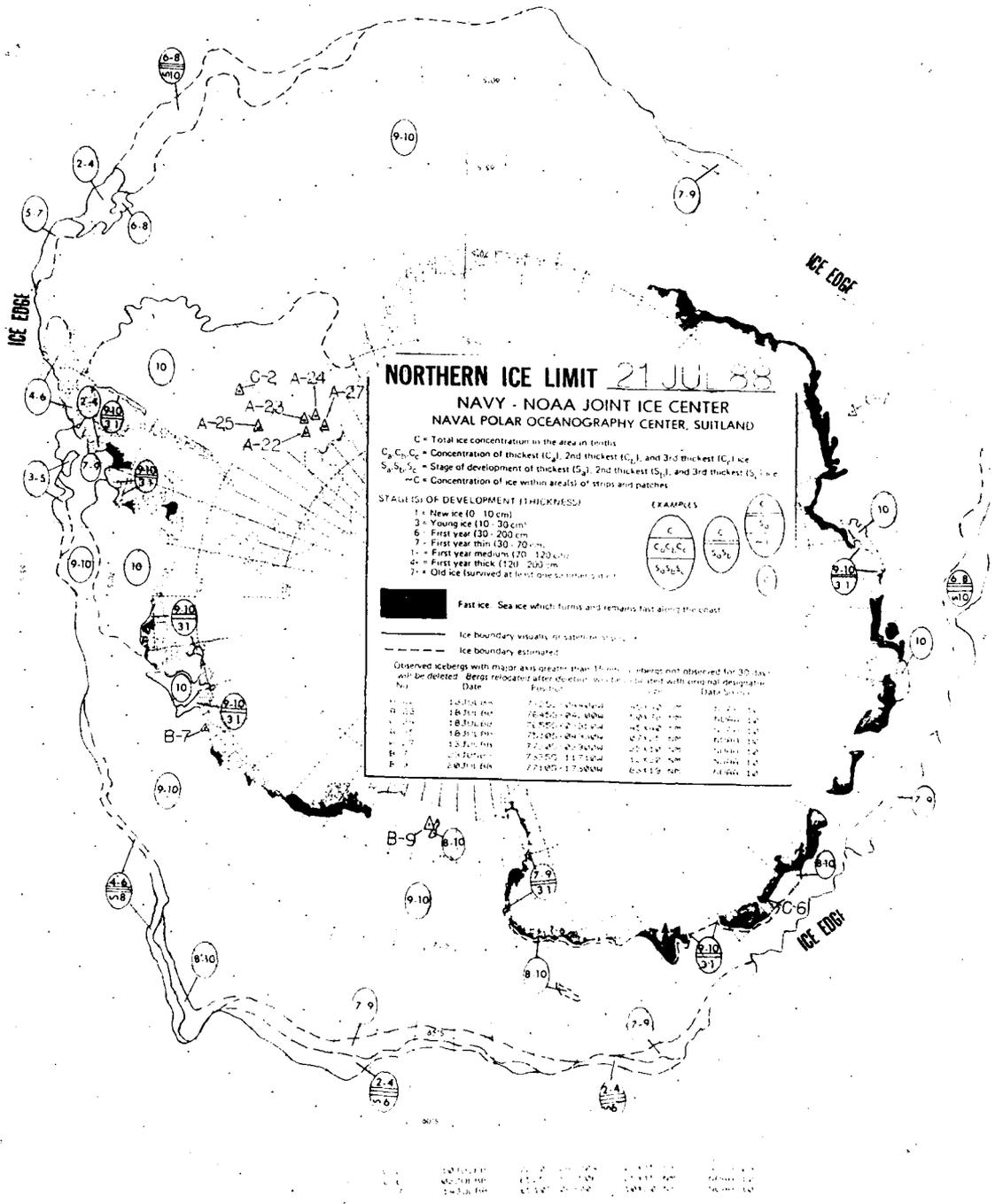
Observed icebergs with major axis greater than 150m (widths not shown) for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designation.

No.	Date	Position	Size	Data Source
1-1	13 JUL 88	72 55N 117 12W	150 x 100 m	NOAA 10
1-2	13 JUL 88	72 55N 117 12W	150 x 100 m	NOAA 10
1-3	13 JUL 88	72 55N 117 12W	150 x 100 m	NOAA 10
1-4	13 JUL 88	72 55N 117 12W	150 x 100 m	NOAA 10
1-5	13 JUL 88	72 55N 117 12W	150 x 100 m	NOAA 10
1-6	13 JUL 88	72 55N 117 12W	150 x 100 m	NOAA 10
1-7	13 JUL 88	72 55N 117 12W	150 x 100 m	NOAA 10
1-8	13 JUL 88	72 55N 117 12W	150 x 100 m	NOAA 10

SEA ICE FREE

No.	Date	Position	Size	Data Source
1-9	14 JUL 88	72 55N 117 12W	150 x 100 m	NOAA 10
1-10	14 JUL 88	72 55N 117 12W	150 x 100 m	NOAA 10
1-11	14 JUL 88	72 55N 117 12W	150 x 100 m	NOAA 10

SEA ICE FREE



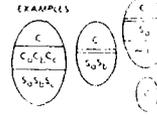
NORTHERN ICE LIMIT 21 JUL 88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 -C = Concentration of ice within areas of strips and patches

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 6 = First year thin (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer period)

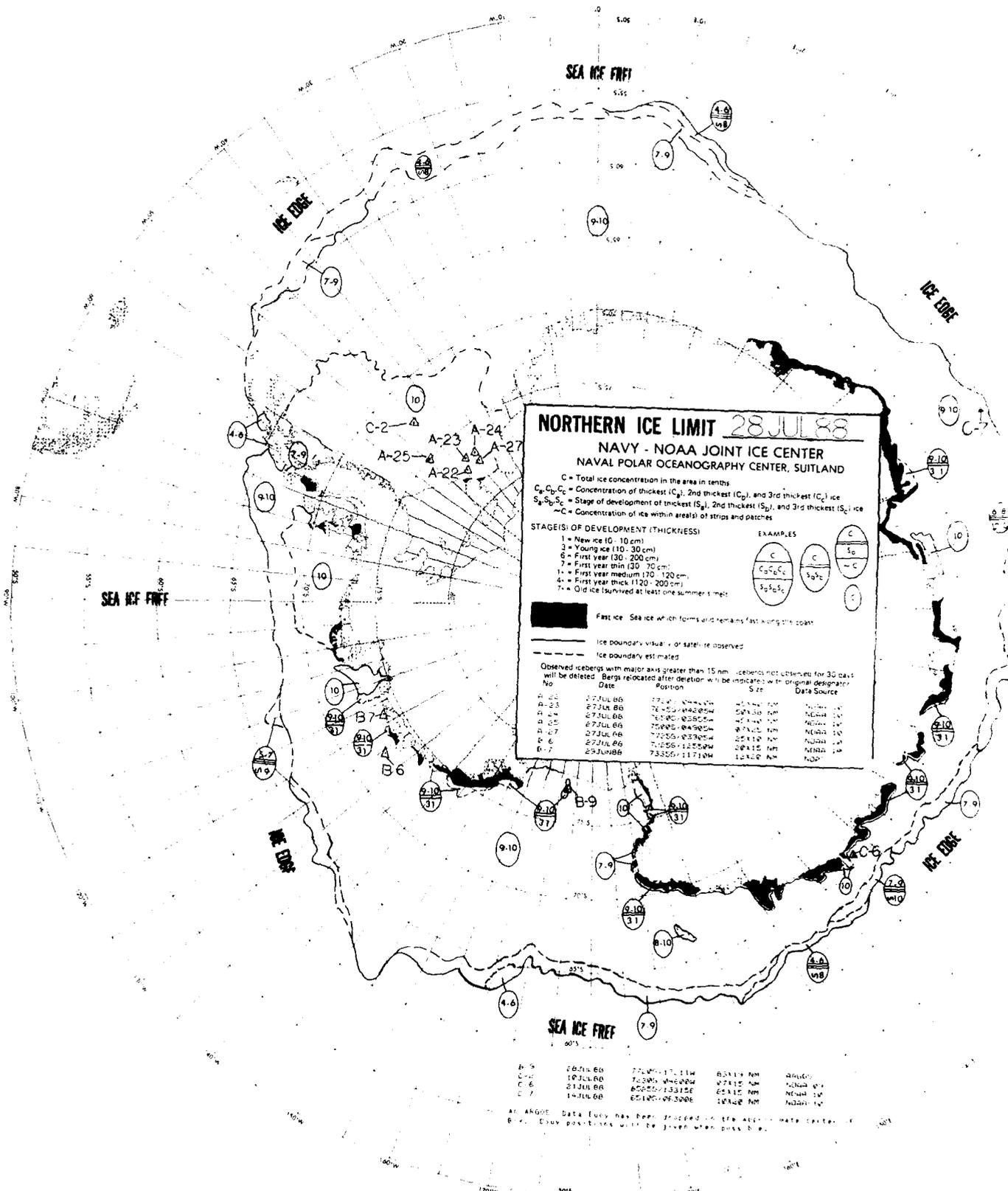


- Fast ice: Sea ice which forms and remains fast along the coast
- Ice boundary visually or satellite observed
- Ice boundary estimated

Observed icebergs with major axis greater than 150m and observed for 30 days will be deleted. Bergs relocated after detection will be plotted with original designation.

No.	Date	Position	Major Axis	Minor Axis	Direction	Remarks
A-1	14 Jul 88	72 50N 137 50W	150m	100m	120°	Observed
A-2	14 Jul 88	72 45N 137 50W	150m	100m	120°	Observed
A-3	14 Jul 88	72 40N 137 50W	150m	100m	120°	Observed
A-4	14 Jul 88	72 35N 137 50W	150m	100m	120°	Observed
A-5	14 Jul 88	72 30N 137 50W	150m	100m	120°	Observed
A-6	14 Jul 88	72 25N 137 50W	150m	100m	120°	Observed
A-7	14 Jul 88	72 20N 137 50W	150m	100m	120°	Observed
A-8	14 Jul 88	72 15N 137 50W	150m	100m	120°	Observed
A-9	14 Jul 88	72 10N 137 50W	150m	100m	120°	Observed
A-10	14 Jul 88	72 05N 137 50W	150m	100m	120°	Observed

SEA ICE FREE



NORTHERN ICE LIMIT 28 JUL 88

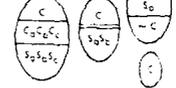
NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 A-C = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (10 - 10 cm)
- 3 = Young ice (110 - 30 cm)
- 6 = First year thin (30 - 70 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (130 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



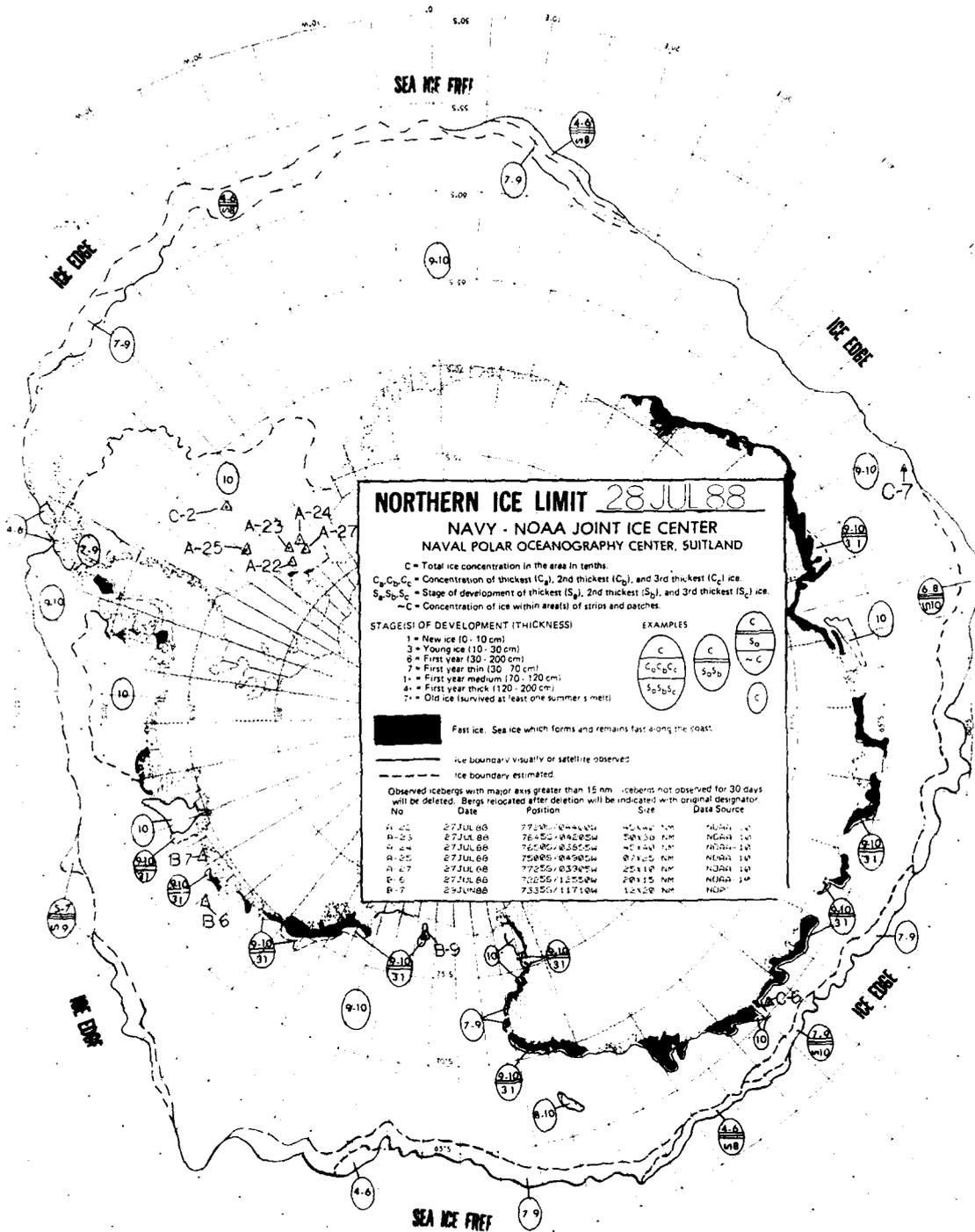
Fast ice - Sea ice which forms and remains fast along the coast
 Ice boundary visual or satellite observed
 Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-20	27 JUL 88	77°00'N 142°00'W	40 x 20 NM	NSAID 10
A-23	27 JUL 88	76°50'N 142°00'W	50 x 30 NM	NSAID 10
A-24	27 JUL 88	76°00'N 138°00'W	40 x 20 NM	NSAID 10
A-25	27 JUL 88	75°00'N 138°00'W	40 x 20 NM	NSAID 10
A-27	27 JUL 88	72°00'N 138°00'W	40 x 20 NM	NSAID 10
B-6	27 JUL 88	71°00'N 138°00'W	20 x 10 NM	NSAID 10
B-7	29 JUL 88	73°00'N 117°00'W	12 x 8 NM	NSAID 10

B-9	28 JUL 88	72°00'N 117°00'W	80 x 15 NM	NSAID 10
C-1	19 JUL 88	71°00'N 138°00'W	60 x 15 NM	NSAID 10
C-6	21 JUL 88	68°00'N 133°00'W	60 x 15 NM	NSAID 10
C-7	14 JUL 88	65°00'N 130°00'W	100 x 20 NM	NSAID 10

ALL ARGUE Data Entry has been dropped in the legend table center of B-7. Entry positions will be joined when data center.



NORTHERN ICE LIMIT 28 JUL 88

**NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND**

C = Total ice concentration in the area in tenths.
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 2 = Old ice (survived at least one summer's melt)

EXAMPLES

C	C	C
C ₁ C ₂ C ₃	S ₁ S ₂	-C

Fast ice. Sea ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed.
 Ice boundary estimated.

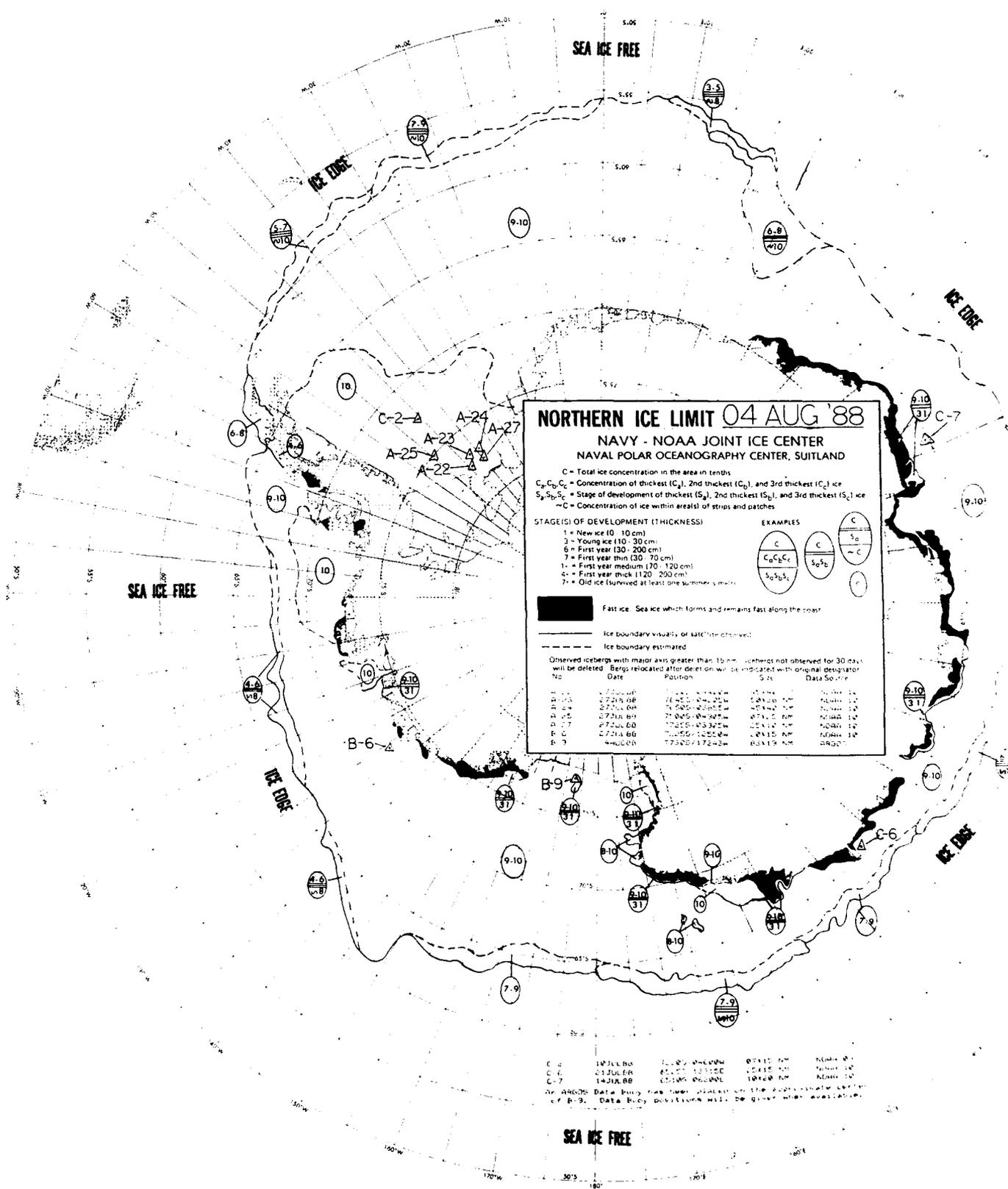
Observed icebergs with major axes greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-1	27 JUL 88	77°30'N 044°45'W	45x100 NM	NORR 1A
A-2	27 JUL 88	76°55'N 042°05'W	50x130 NM	NORR 1A
A-3	27 JUL 88	76°40'N 038°05'W	40x100 NM	NORR 1A
A-4	27 JUL 88	75°05'N 049°05'W	87x125 NM	NORR 1A
A-7	27 JUL 88	77°55'N 033°05'W	25x110 NM	NORR 1A
B-5	27 JUL 88	70°55'N 155°05'W	20x15 NM	NORR 1A
B-7	28 JUL 88	73°55'N 117°10'W	12x20 NM	NORR 1A

SEA ICE FREE

A-1	26 JUL 88	77°45'N 171°15'W	85x19 NM	2100Z
A-2	19 JUL 88	76°00'N 048°00'W	47x110 NM	NORR 07
A-3	21 JUL 88	65°55'N 133°15'E	25x110 NM	NORR 1A
A-7	14 JUL 88	65°10'N 09°30'W	10x20 NM	NORR 1A

All other data is a fax over, dropped in the approximate center of the 1000 km x 1000 km area shown when possible.



NORTHERN ICE LIMIT 04 AUG '88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice
 -C = Concentration of ice within areals of strips and patches

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year (30 - 200 cm)
- 4 = First year thin (30 - 70 cm)
- 5 = First year medium (70 - 120 cm)
- 6 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer melt)

EXAMPLES

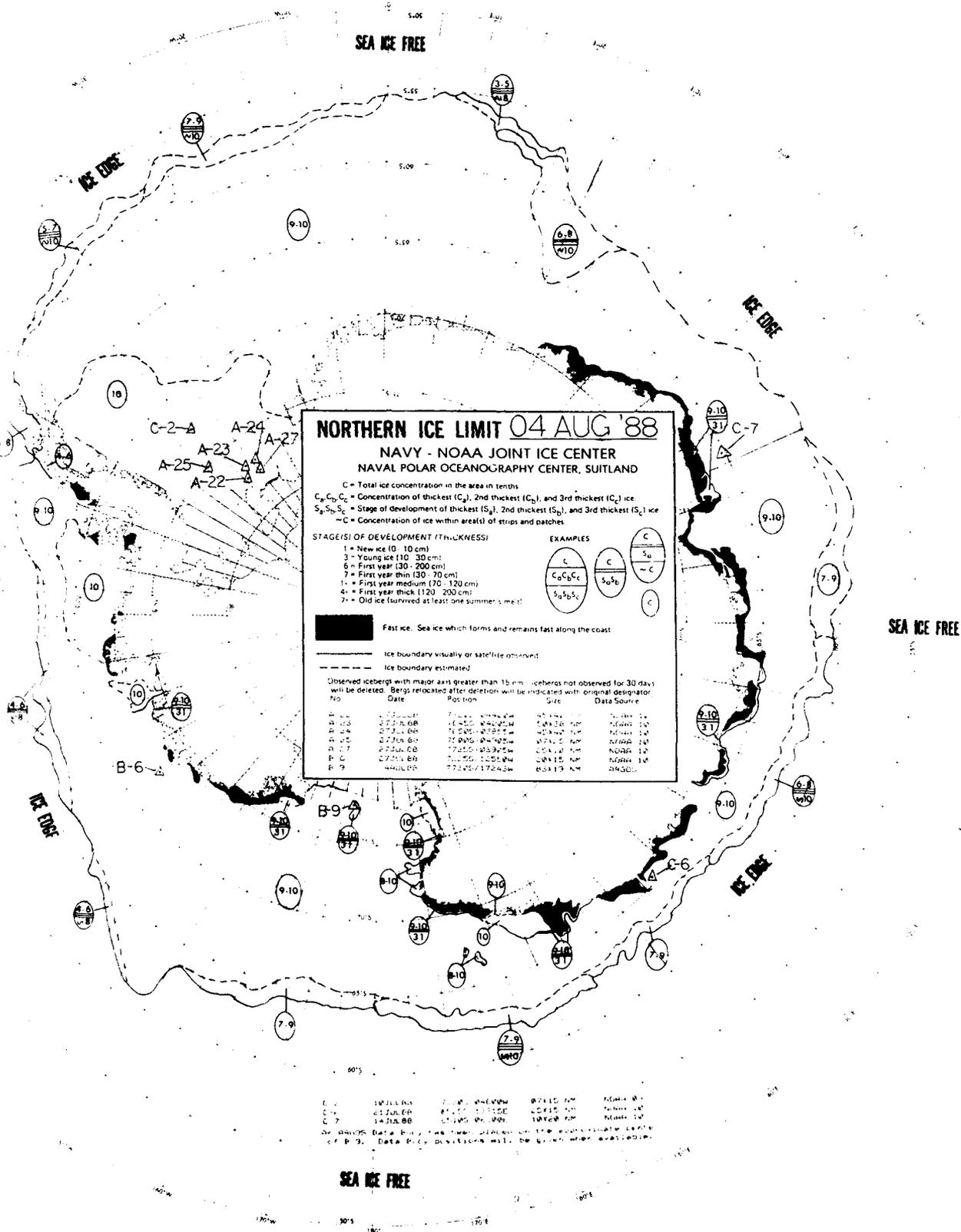
C C ₁ C ₂ C ₃ S ₁ S ₂ S ₃	C S ₁ S ₂	C -C	C S ₁
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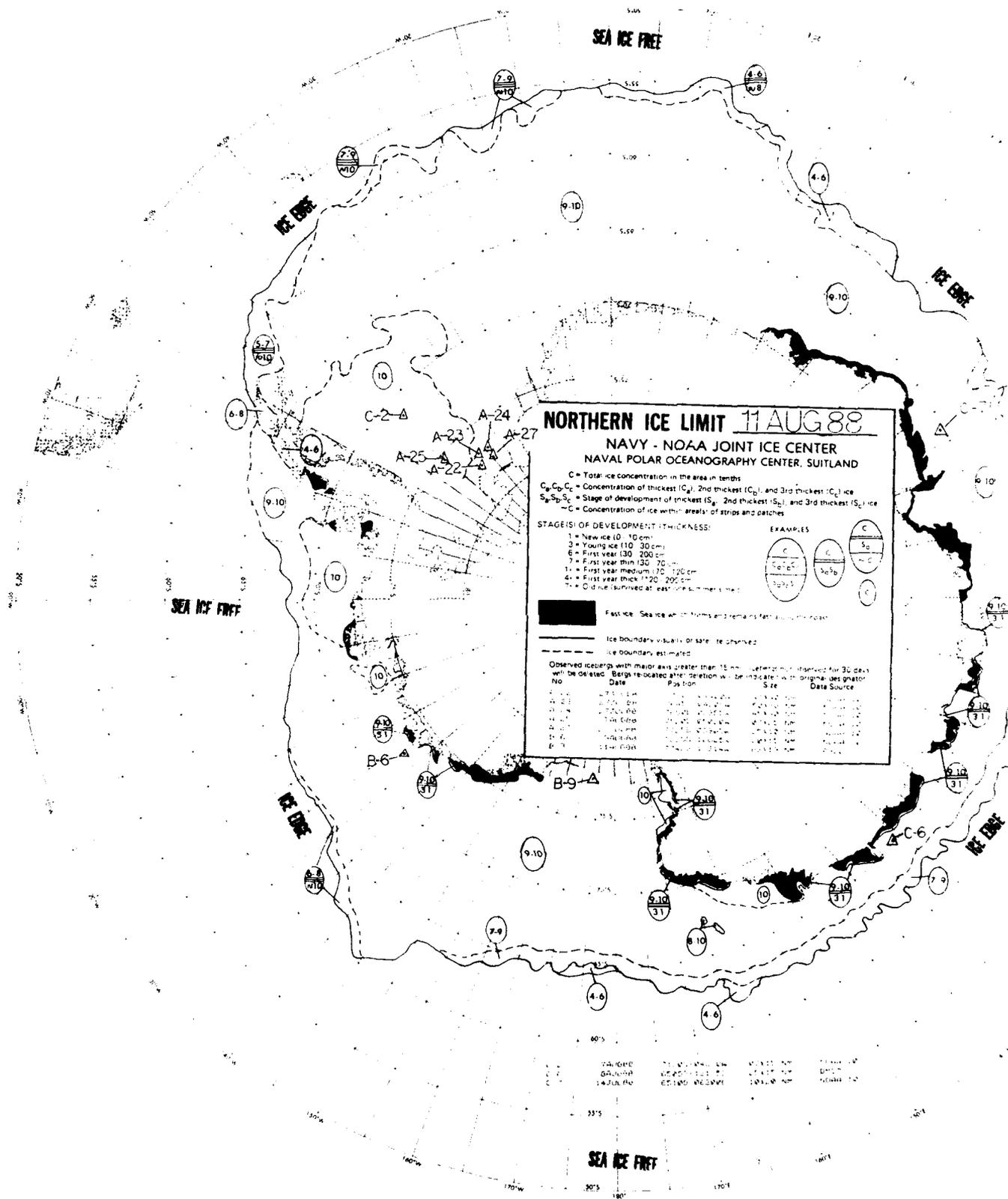
Fast ice: Sea ice which forms and remains fast along the coast
 Ice boundary visually or satellite observed
 Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-1	27 JUL 88	71 04S 174 21W	12 X 14 NM	ARGOS
A-2	27 JUL 88	71 05S 174 21W	12 X 14 NM	ARGOS
A-3	27 JUL 88	71 06S 174 21W	12 X 14 NM	ARGOS
A-4	27 JUL 88	71 07S 174 21W	12 X 14 NM	ARGOS
A-5	27 JUL 88	71 08S 174 21W	12 X 14 NM	ARGOS
A-6	27 JUL 88	71 09S 174 21W	12 X 14 NM	ARGOS
A-7	27 JUL 88	71 10S 174 21W	12 X 14 NM	ARGOS
B-1	27 JUL 88	71 05S 174 21W	12 X 14 NM	ARGOS
B-2	27 JUL 88	71 06S 174 21W	12 X 14 NM	ARGOS
B-3	27 JUL 88	71 07S 174 21W	12 X 14 NM	ARGOS
B-4	27 JUL 88	71 08S 174 21W	12 X 14 NM	ARGOS
B-5	27 JUL 88	71 09S 174 21W	12 X 14 NM	ARGOS
B-6	27 JUL 88	71 10S 174 21W	12 X 14 NM	ARGOS
B-7	27 JUL 88	71 11S 174 21W	12 X 14 NM	ARGOS
B-8	27 JUL 88	71 12S 174 21W	12 X 14 NM	ARGOS
B-9	27 JUL 88	71 13S 174 21W	12 X 14 NM	ARGOS
B-10	27 JUL 88	71 14S 174 21W	12 X 14 NM	ARGOS
B-11	27 JUL 88	71 15S 174 21W	12 X 14 NM	ARGOS
B-12	27 JUL 88	71 16S 174 21W	12 X 14 NM	ARGOS
B-13	27 JUL 88	71 17S 174 21W	12 X 14 NM	ARGOS
B-14	27 JUL 88	71 18S 174 21W	12 X 14 NM	ARGOS
B-15	27 JUL 88	71 19S 174 21W	12 X 14 NM	ARGOS
B-16	27 JUL 88	71 20S 174 21W	12 X 14 NM	ARGOS
B-17	27 JUL 88	71 21S 174 21W	12 X 14 NM	ARGOS
B-18	27 JUL 88	71 22S 174 21W	12 X 14 NM	ARGOS
B-19	27 JUL 88	71 23S 174 21W	12 X 14 NM	ARGOS
B-20	27 JUL 88	71 24S 174 21W	12 X 14 NM	ARGOS
B-21	27 JUL 88	71 25S 174 21W	12 X 14 NM	ARGOS
B-22	27 JUL 88	71 26S 174 21W	12 X 14 NM	ARGOS
B-23	27 JUL 88	71 27S 174 21W	12 X 14 NM	ARGOS
B-24	27 JUL 88	71 28S 174 21W	12 X 14 NM	ARGOS
B-25	27 JUL 88	71 29S 174 21W	12 X 14 NM	ARGOS
B-26	27 JUL 88	71 30S 174 21W	12 X 14 NM	ARGOS
B-27	27 JUL 88	71 31S 174 21W	12 X 14 NM	ARGOS
B-28	27 JUL 88	71 32S 174 21W	12 X 14 NM	ARGOS
B-29	27 JUL 88	71 33S 174 21W	12 X 14 NM	ARGOS
B-30	27 JUL 88	71 34S 174 21W	12 X 14 NM	ARGOS
B-31	27 JUL 88	71 35S 174 21W	12 X 14 NM	ARGOS
B-32	27 JUL 88	71 36S 174 21W	12 X 14 NM	ARGOS
B-33	27 JUL 88	71 37S 174 21W	12 X 14 NM	ARGOS
B-34	27 JUL 88	71 38S 174 21W	12 X 14 NM	ARGOS
B-35	27 JUL 88	71 39S 174 21W	12 X 14 NM	ARGOS
B-36	27 JUL 88	71 40S 174 21W	12 X 14 NM	ARGOS
B-37	27 JUL 88	71 41S 174 21W	12 X 14 NM	ARGOS
B-38	27 JUL 88	71 42S 174 21W	12 X 14 NM	ARGOS
B-39	27 JUL 88	71 43S 174 21W	12 X 14 NM	ARGOS
B-40	27 JUL 88	71 44S 174 21W	12 X 14 NM	ARGOS
B-41	27 JUL 88	71 45S 174 21W	12 X 14 NM	ARGOS
B-42	27 JUL 88	71 46S 174 21W	12 X 14 NM	ARGOS
B-43	27 JUL 88	71 47S 174 21W	12 X 14 NM	ARGOS
B-44	27 JUL 88	71 48S 174 21W	12 X 14 NM	ARGOS
B-45	27 JUL 88	71 49S 174 21W	12 X 14 NM	ARGOS
B-46	27 JUL 88	71 50S 174 21W	12 X 14 NM	ARGOS
B-47	27 JUL 88	71 51S 174 21W	12 X 14 NM	ARGOS
B-48	27 JUL 88	71 52S 174 21W	12 X 14 NM	ARGOS
B-49	27 JUL 88	71 53S 174 21W	12 X 14 NM	ARGOS
B-50	27 JUL 88	71 54S 174 21W	12 X 14 NM	ARGOS
B-51	27 JUL 88	71 55S 174 21W	12 X 14 NM	ARGOS
B-52	27 JUL 88	71 56S 174 21W	12 X 14 NM	ARGOS
B-53	27 JUL 88	71 57S 174 21W	12 X 14 NM	ARGOS
B-54	27 JUL 88	71 58S 174 21W	12 X 14 NM	ARGOS
B-55	27 JUL 88	71 59S 174 21W	12 X 14 NM	ARGOS
B-56	27 JUL 88	71 50S 174 21W	12 X 14 NM	ARGOS
B-57	27 JUL 88	71 51S 174 21W	12 X 14 NM	ARGOS
B-58	27 JUL 88	71 52S 174 21W	12 X 14 NM	ARGOS
B-59	27 JUL 88	71 53S 174 21W	12 X 14 NM	ARGOS
B-60	27 JUL 88	71 54S 174 21W	12 X 14 NM	ARGOS
B-61	27 JUL 88	71 55S 174 21W	12 X 14 NM	ARGOS
B-62	27 JUL 88	71 56S 174 21W	12 X 14 NM	ARGOS
B-63	27 JUL 88	71 57S 174 21W	12 X 14 NM	ARGOS
B-64	27 JUL 88	71 58S 174 21W	12 X 14 NM	ARGOS
B-65	27 JUL 88	71 59S 174 21W	12 X 14 NM	ARGOS
B-66	27 JUL 88	71 50S 174 21W	12 X 14 NM	ARGOS
B-67	27 JUL 88	71 51S 174 21W	12 X 14 NM	ARGOS
B-68	27 JUL 88	71 52S 174 21W	12 X 14 NM	ARGOS
B-69	27 JUL 88	71 53S 174 21W	12 X 14 NM	ARGOS
B-70	27 JUL 88	71 54S 174 21W	12 X 14 NM	ARGOS
B-71	27 JUL 88	71 55S 174 21W	12 X 14 NM	ARGOS
B-72	27 JUL 88	71 56S 174 21W	12 X 14 NM	ARGOS
B-73	27 JUL 88	71 57S 174 21W	12 X 14 NM	ARGOS
B-74	27 JUL 88	71 58S 174 21W	12 X 14 NM	ARGOS
B-75	27 JUL 88	71 59S 174 21W	12 X 14 NM	ARGOS
B-76	27 JUL 88	71 50S 174 21W	12 X 14 NM	ARGOS
B-77	27 JUL 88	71 51S 174 21W	12 X 14 NM	ARGOS
B-78	27 JUL 88	71 52S 174 21W	12 X 14 NM	ARGOS
B-79	27 JUL 88	71 53S 174 21W	12 X 14 NM	ARGOS
B-80	27 JUL 88	71 54S 174 21W	12 X 14 NM	ARGOS
B-81	27 JUL 88	71 55S 174 21W	12 X 14 NM	ARGOS
B-82	27 JUL 88	71 56S 174 21W	12 X 14 NM	ARGOS
B-83	27 JUL 88	71 57S 174 21W	12 X 14 NM	ARGOS
B-84	27 JUL 88	71 58S 174 21W	12 X 14 NM	ARGOS
B-85	27 JUL 88	71 59S 174 21W	12 X 14 NM	ARGOS
B-86	27 JUL 88	71 50S 174 21W	12 X 14 NM	ARGOS
B-87	27 JUL 88	71 51S 174 21W	12 X 14 NM	ARGOS
B-88	27 JUL 88	71 52S 174 21W	12 X 14 NM	ARGOS
B-89	27 JUL 88	71 53S 174 21W	12 X 14 NM	ARGOS
B-90	27 JUL 88	71 54S 174 21W	12 X 14 NM	ARGOS
B-91	27 JUL 88	71 55S 174 21W	12 X 14 NM	ARGOS
B-92	27 JUL 88	71 56S 174 21W	12 X 14 NM	ARGOS
B-93	27 JUL 88	71 57S 174 21W	12 X 14 NM	ARGOS
B-94	27 JUL 88	71 58S 174 21W	12 X 14 NM	ARGOS
B-95	27 JUL 88	71 59S 174 21W	12 X 14 NM	ARGOS
B-96	27 JUL 88	71 50S 174 21W	12 X 14 NM	ARGOS
B-97	27 JUL 88	71 51S 174 21W	12 X 14 NM	ARGOS
B-98	27 JUL 88	71 52S 174 21W	12 X 14 NM	ARGOS
B-99	27 JUL 88	71 53S 174 21W	12 X 14 NM	ARGOS
B-100	27 JUL 88	71 54S 174 21W	12 X 14 NM	ARGOS

An ARGOS Data Buoy has been placed on the northern limit of B-9. Data Buoy positions will be given when available.





SEA ICE FREE

ICE EDGE

SEA ICE FREE

NORTHERN ICE LIMIT 11 AUG 88

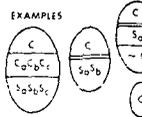
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGES OF DEVELOPMENT BY THICKNESS:

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 8 = First year medium (70 - 120 cm)
- 9 = First year thick (120 - 200 cm)
- 9+ = Old ice (survived at least one summer's melt)

EXAMPLES



Fast ice: Sea ice which forms and remains fast along the coast

— ice boundary visually or satellite observed
 - - - ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-1	27 JUL 88	77°25'N 157°45'W	100x200 NM	NOAA 12
A-2	27 JUL 88	76°45'N 157°30'W	50x200 NM	NOAA 12
A-3	27 JUL 88	76°05'N 157°15'W	40x200 NM	NOAA 12
A-4	27 JUL 88	75°25'N 157°00'W	30x200 NM	NOAA 12
A-5	27 JUL 88	74°45'N 156°45'W	20x200 NM	NOAA 12
A-6	27 JUL 88	74°05'N 156°30'W	10x200 NM	NOAA 12
A-7	27 JUL 88	73°25'N 156°15'W	10x150 NM	NOAA 12
A-8	27 JUL 88	72°45'N 156°00'W	10x150 NM	NOAA 12
A-9	27 JUL 88	72°05'N 155°45'W	10x150 NM	NOAA 12
A-10	27 JUL 88	71°25'N 155°30'W	10x150 NM	NOAA 12

SEA ICE FREE

SEA ICE FREE

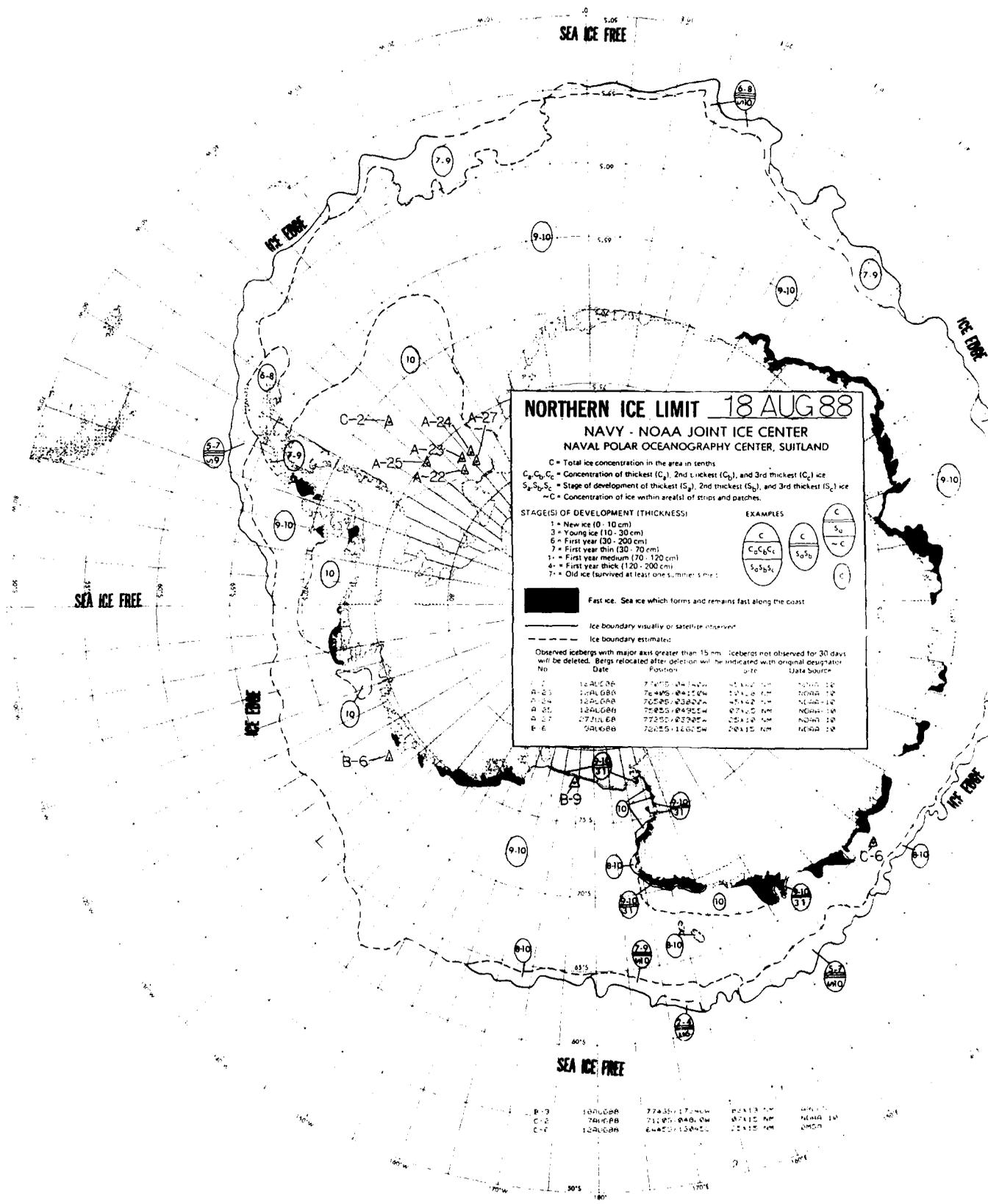
ICE EDGE

ICE EDGE

ICE EDGE

No.	Date	Position	Size	Data Source
B-1	27 JUL 88	77°25'N 157°45'W	100x200 NM	NOAA 12
B-2	27 JUL 88	76°45'N 157°30'W	50x200 NM	NOAA 12
B-3	27 JUL 88	76°05'N 157°15'W	40x200 NM	NOAA 12
B-4	27 JUL 88	75°25'N 157°00'W	30x200 NM	NOAA 12
B-5	27 JUL 88	74°45'N 156°45'W	20x200 NM	NOAA 12
B-6	27 JUL 88	74°05'N 156°30'W	10x200 NM	NOAA 12
B-7	27 JUL 88	73°25'N 156°15'W	10x150 NM	NOAA 12
B-8	27 JUL 88	72°45'N 156°00'W	10x150 NM	NOAA 12
B-9	27 JUL 88	72°05'N 155°45'W	10x150 NM	NOAA 12
B-10	27 JUL 88	71°25'N 155°30'W	10x150 NM	NOAA 12

SEA ICE FREE



NORTHERN ICE LIMIT 18 AUG 88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 ~C = Concentration of ice within areas of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (10 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

C	C	C
C ₁ C ₂ C ₃	S ₁ S ₂ S ₃	~C

Fast ice. Sea ice which forms and remains fast along the coast
 Ice boundary visually or satellite observed
 Ice boundary estimated

Observed icebergs with major axis greater than 15 m. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-23	12 AUG 88	77°15'N 141°20'W	12 x 12 NM	NOAA 12
A-24	12 AUG 88	76°45'N 141°20'W	12 x 12 NM	NOAA 12
A-25	12 AUG 88	75°25'N 142°00'W	12 x 12 NM	NOAA 12
A-27	07 JUL 88	77°25'N 142°00'W	12 x 12 NM	NOAA 12
B-6	09 AUG 88	78°25'N 146°50'W	12 x 12 NM	NOAA 12

B-9	10 AUG 88	77°35'N 172°00'W	12 x 12 NM	NOAA 12
C-2	24 AUG 88	71°00'N 148°00'W	12 x 12 NM	NOAA 12
C-6	12 AUG 88	64°45'N 150°00'W	12 x 12 NM	NOAA 12

SEA ICE FREE

ICE EDGE

ICE EDGE

SEA ICE FREE

NORTHERN ICE LIMIT 18 AUG 88

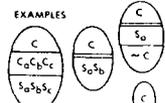
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
-C = Concentration of ice within areas of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (10 - 30 cm)
- 3 = Young ice (30 - 70 cm)
- 6 = First year thin (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



Fast ice: Sea ice which forms and remains fast along the coast

Ice boundary visually or satellite observed

Ice boundary estimated

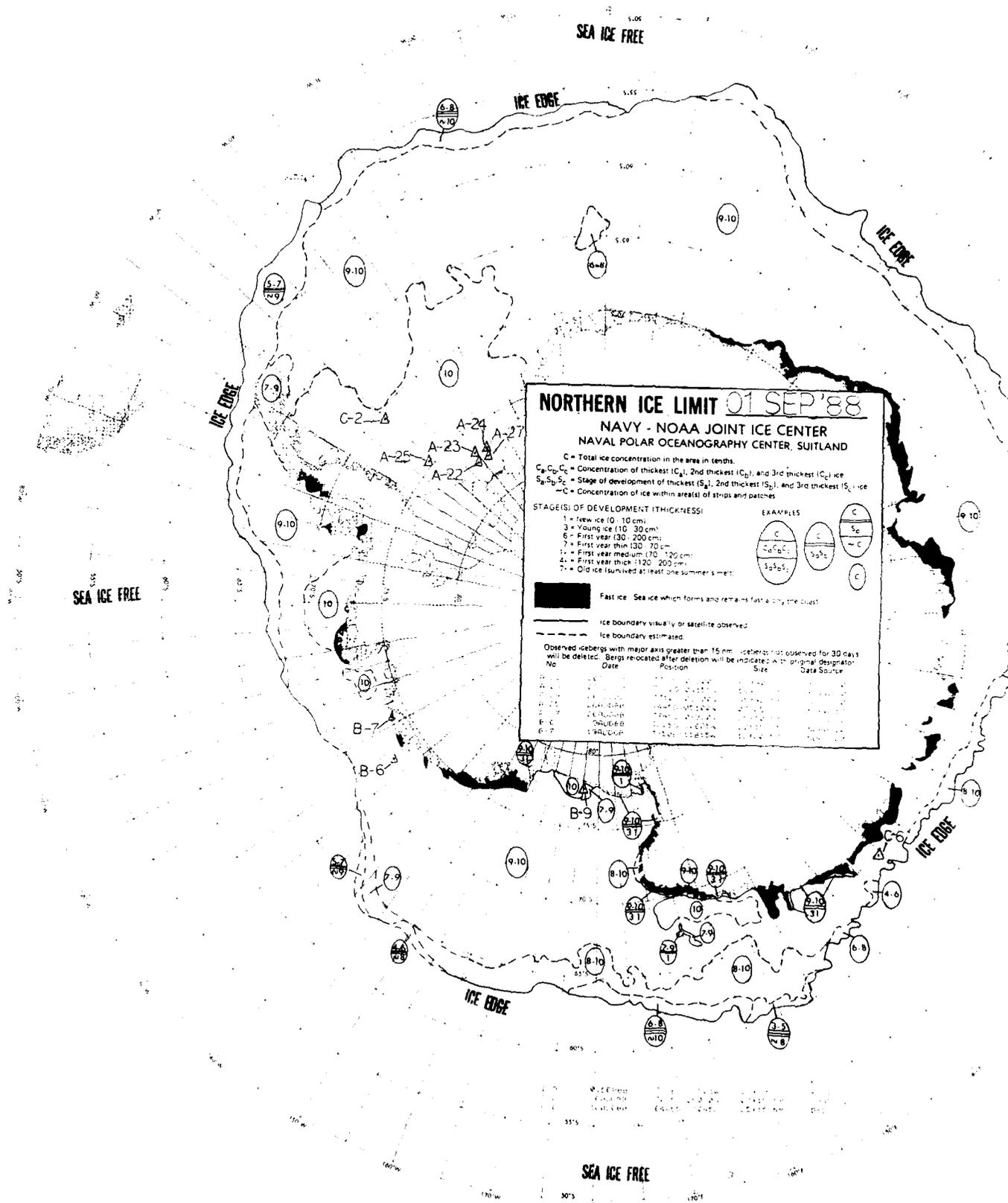
Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-22	16 AUG 88	77°15'N 153°42'W	45 x 20 NM	NOAA-10
A-23	16 AUG 88	76°45'N 154°10'W	10 x 20 NM	NOAA-10
A-24	16 AUG 88	76°25'N 153°22'W	17 x 20 NM	NOAA-10
A-25	16 AUG 88	75°55'N 153°52'W	10 x 15 NM	NOAA-10
A-27	17 JUL 88	77°55'N 153°22'W	50 x 15 NM	NOAA-10
B-6	18 AUG 88	76°55'N 153°52'W	20 x 15 NM	NOAA-10

B-9	18 AUG 88	77°35'N 17°42'W	10 x 10 NM	NOAA-10
C-2	20 AUG 88	71°05'N 148°02'W	10 x 15 NM	NOAA-10
C-6	18 AUG 88	64°52'N 153°45'W	15 x 15 NM	NOAA-10

SEA ICE FREE

B-9	18 AUG 88	77°35'N 17°42'W	10 x 10 NM	NOAA-10
C-2	20 AUG 88	71°05'N 148°02'W	10 x 15 NM	NOAA-10
C-6	18 AUG 88	64°52'N 153°45'W	15 x 15 NM	NOAA-10



SEA ICE FREE

NORTHERN ICE LIMIT 01 SEP '88

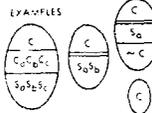
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 -C = Concentration of ice within area(s) of strips and patches

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 50 cm)
- 8 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7+ = Old ice (survived at least one summer's melt)

EXAMPLES



■ Fast ice: Sea ice which forms and remains fast along the coast

--- ice boundary visually or satellite observed

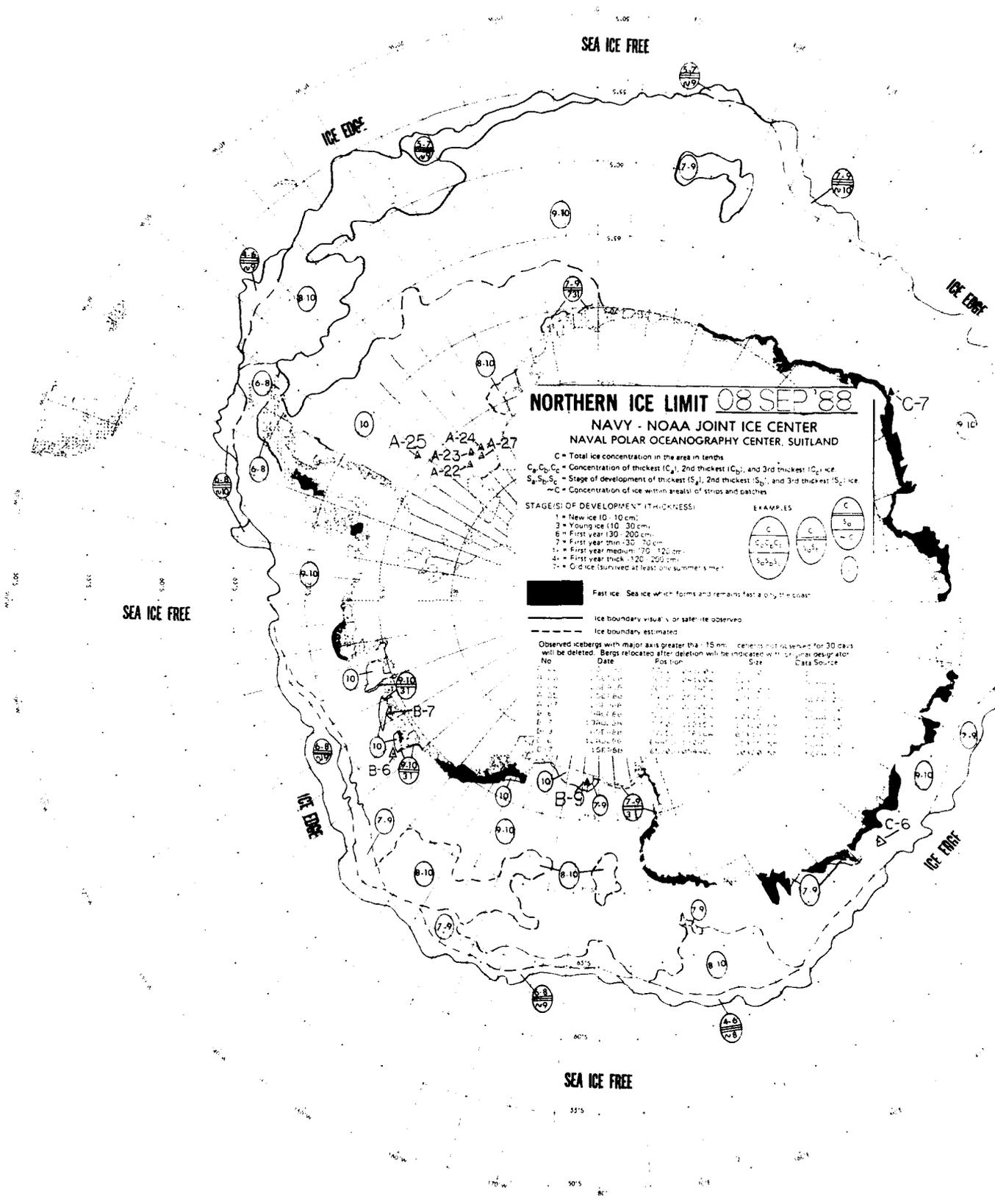
--- ice boundary estimated

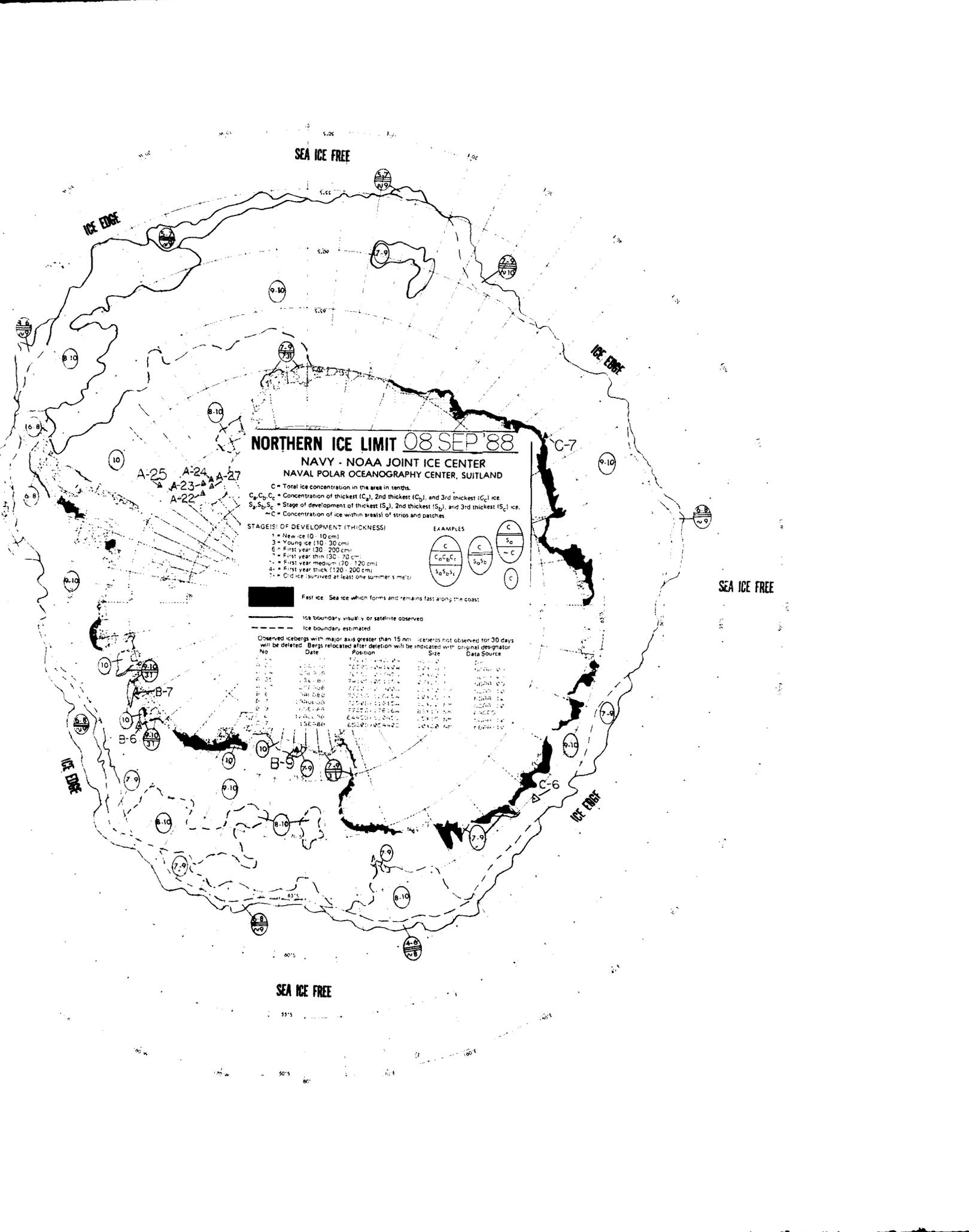
Observed icebergs with major axis greater than 15 nm; icebergs not observed for 30 days will be deleted. Bergs re-located after deletion will be indicated with original designator.

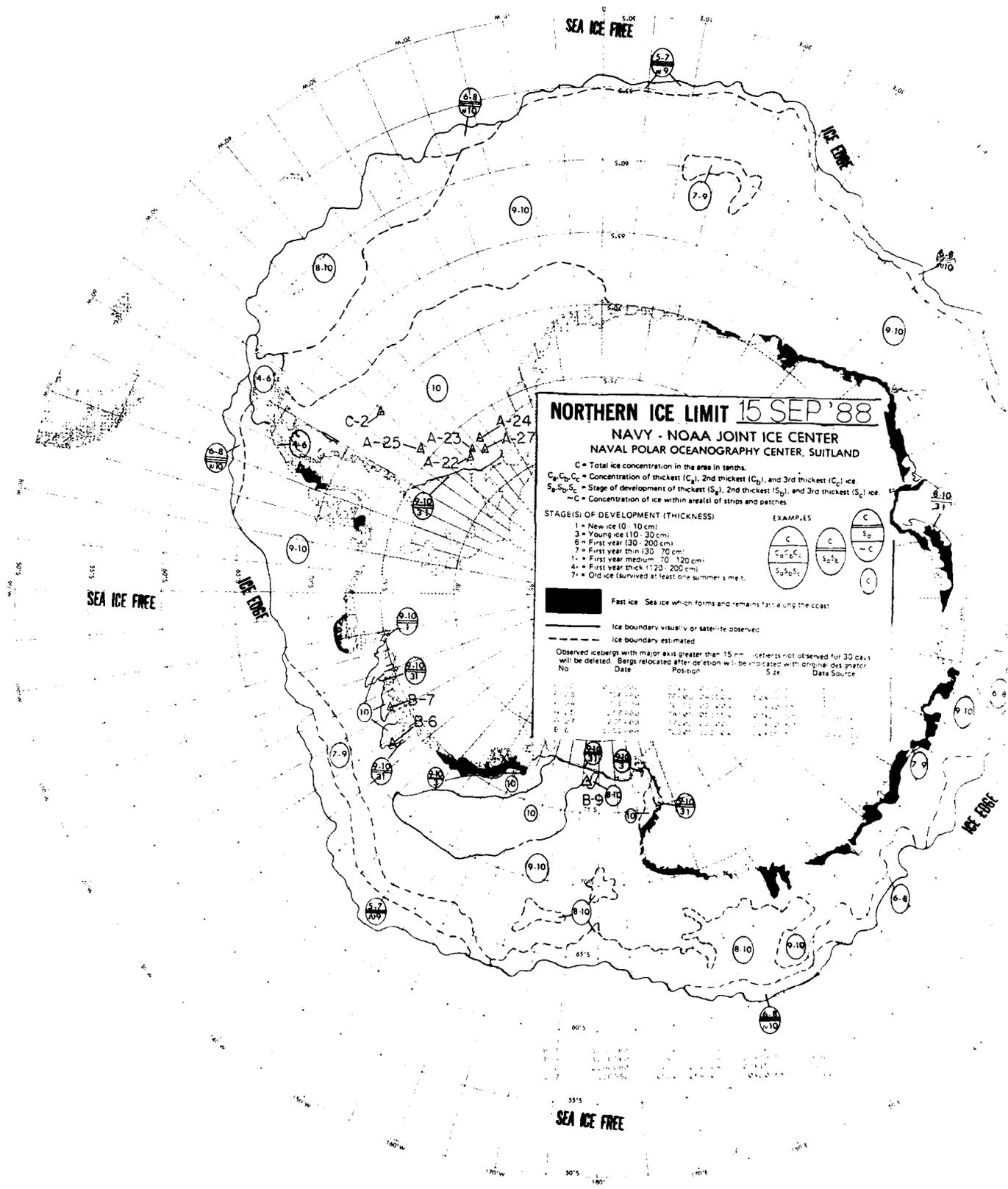
No.	Date	Position	Size	Site	Data Source
1	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
2	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
3	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
4	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
5	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
6	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
7	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
8	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
9	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
10	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
11	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
12	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
13	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
14	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
15	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
16	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
17	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
18	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
19	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
20	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
21	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
22	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
23	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
24	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
25	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
26	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
27	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
28	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
29	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
30	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
31	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
32	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
33	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
34	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
35	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
36	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
37	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
38	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
39	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
40	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
41	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
42	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
43	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
44	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
45	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
46	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
47	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
48	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
49	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000
50	8/29	110° 15' W, 72° 15' N	1000 x 1000	1000	1000

SEA ICE FREE

SEA ICE FREE







NORTHERN ICE LIMIT 15 SEP '88

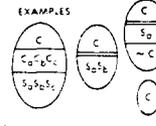
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 ~C = Concentration of ice within areal(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7+ = Old ice (survived at least one summer's melt)

EXAMPLES



Fast ice - Sea ice which forms and remains fast along the coast

Ice boundary visually or satellite observed
 Ice boundary estimated

Observed icebergs with major axis greater than 15 nm, icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designation.

No.	Date	Position	Size	Data Source
1	15 SEP 88	77° 15' N 12° 15' W	100m x 100m	NOAA
2	15 SEP 88	77° 15' N 12° 15' W	100m x 100m	NOAA
3	15 SEP 88	77° 15' N 12° 15' W	100m x 100m	NOAA
4	15 SEP 88	77° 15' N 12° 15' W	100m x 100m	NOAA
5	15 SEP 88	77° 15' N 12° 15' W	100m x 100m	NOAA
6	15 SEP 88	77° 15' N 12° 15' W	100m x 100m	NOAA

NORTHERN ICE LIMIT 15 SEP '88

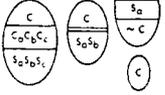
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 $\sim C$ = Concentration of ice within area(s) of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



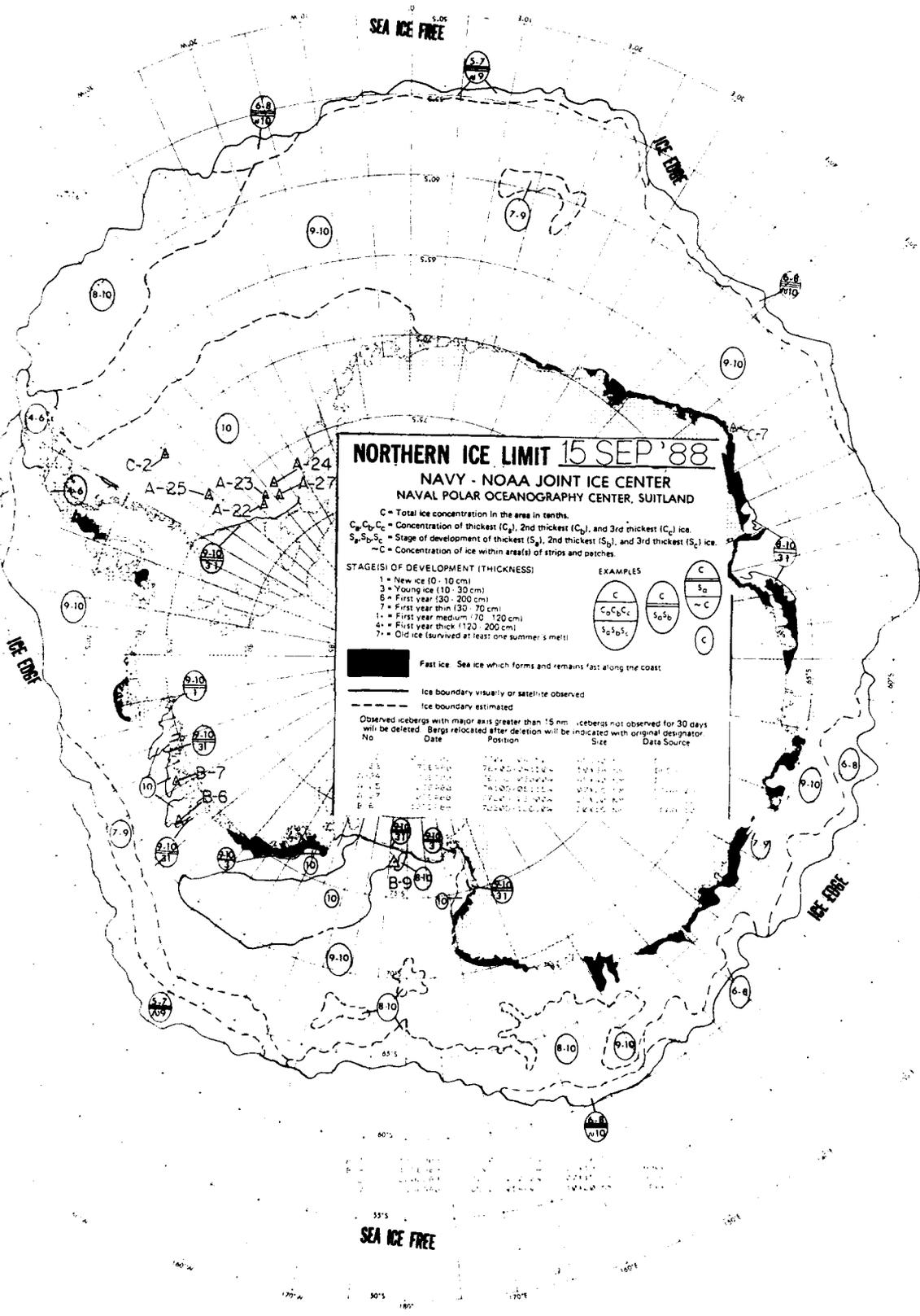
Fast ice - Sea ice which forms and remains fast along the coast

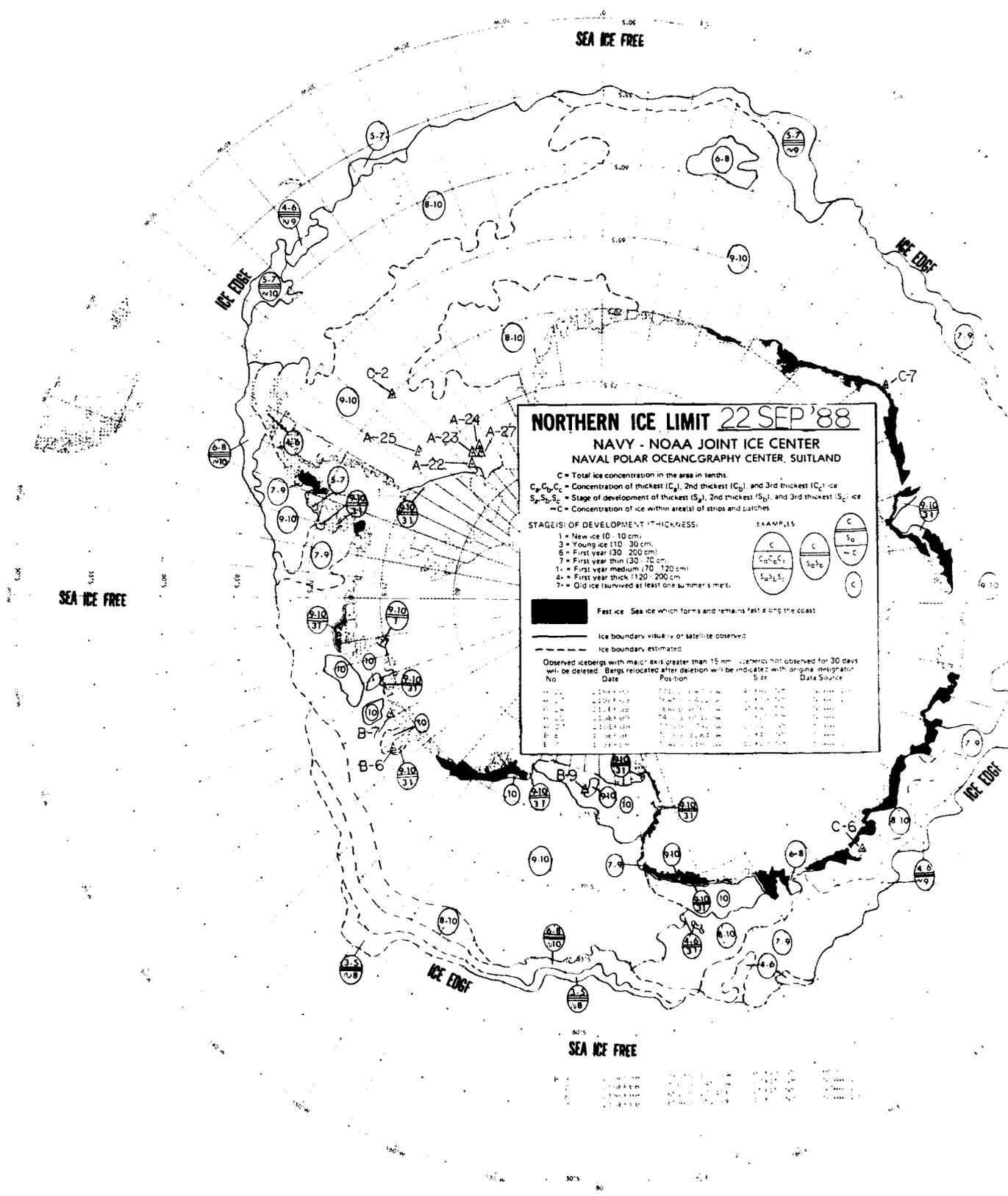
Ice boundary visually or satellite observed

Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-1	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-2	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-3	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-4	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-5	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-6	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-7	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-8	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-9	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-10	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-11	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-12	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-13	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-14	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-15	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-16	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-17	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-18	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-19	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-20	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-21	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-22	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-23	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-24	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-25	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-26	15 SEP 88	75°N 170°W	100 x 200	NOAA
A-27	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-1	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-2	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-3	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-4	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-5	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-6	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-7	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-8	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-9	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-10	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-11	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-12	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-13	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-14	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-15	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-16	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-17	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-18	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-19	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-20	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-21	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-22	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-23	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-24	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-25	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-26	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-27	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-28	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-29	15 SEP 88	75°N 170°W	100 x 200	NOAA
B-30	15 SEP 88	75°N 170°W	100 x 200	NOAA





NORTHERN ICE LIMIT 22 SEP '88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice
 -C = Concentration of ice within areal of strips and patches

STAGES OF DEVELOPMENT BY THICKNESS:

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES:

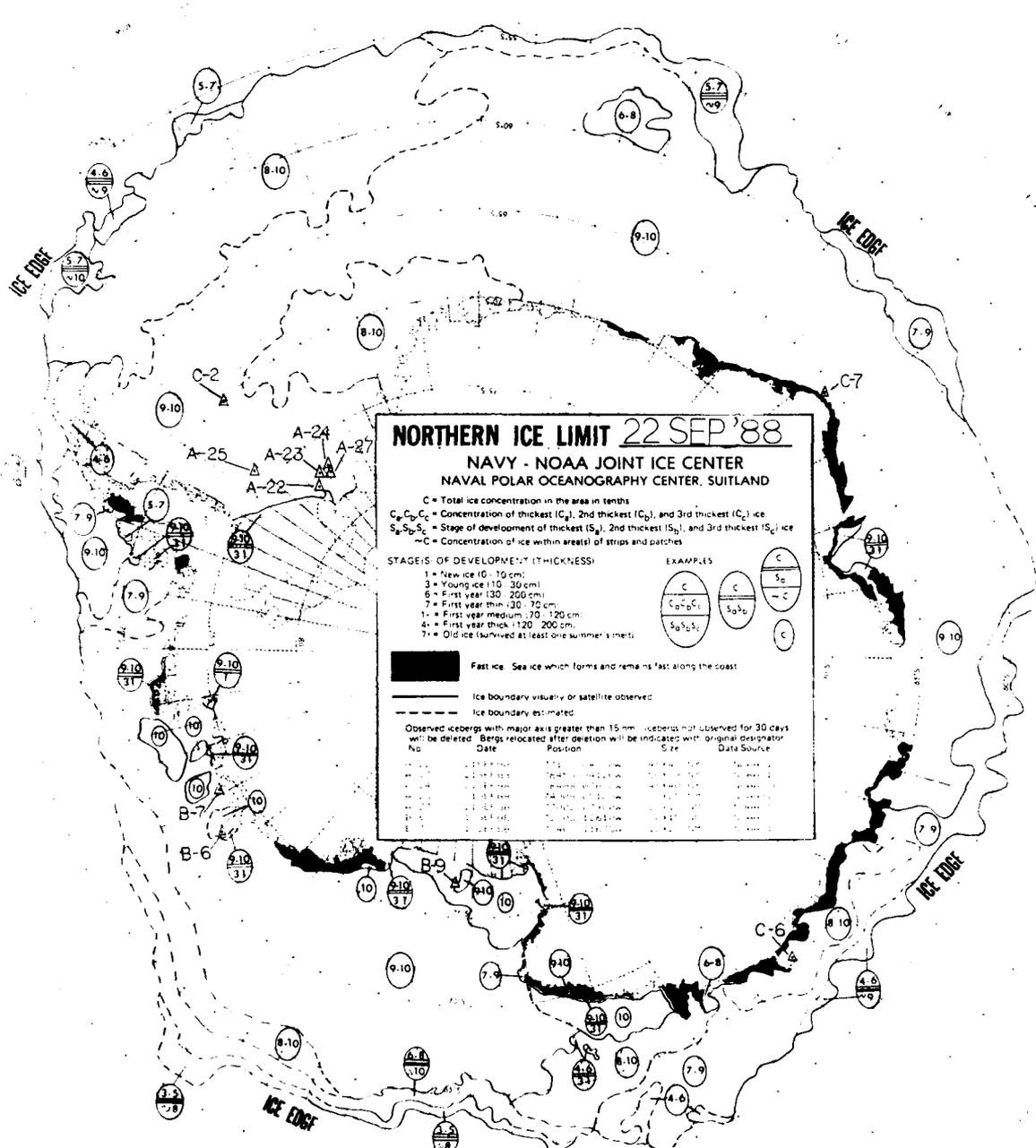
$\frac{C}{C_1 C_2 C_3}$	$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{-C}$
-------------------------	-------------------------	----------------

Fast ice - Sea ice which forms and remains fast along the coast
 Ice boundary visually or satellite observed
 Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
1	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
2	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
3	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
4	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
5	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
6	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
7	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
8	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
9	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
10	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
11	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
12	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
13	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
14	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
15	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
16	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
17	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
18	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
19	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
20	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
21	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
22	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
23	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
24	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
25	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
26	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
27	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
28	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
29	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
30	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
31	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
32	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
33	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
34	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
35	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
36	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
37	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
38	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
39	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
40	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
41	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
42	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
43	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
44	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
45	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
46	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
47	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
48	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
49	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD
50	25 SEP 88	72° 15' N 157° 15' W	40 x 100 m	ASD

SEA ICE FREE



NORTHERN ICE LIMIT 22 SEP '88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
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STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year (30 - 200 cm)
- 4 = First year thin (30 - 70 cm)
- 5 = First year medium (70 - 120 cm)
- 6 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

C	C	C
C ₁ C ₂ C ₃	C ₁ C ₂ C ₃	C ₁ C ₂ C ₃
S ₁ S ₂ S ₃	S ₁ S ₂ S ₃	S ₁ S ₂ S ₃

■ Fast ice: Sea ice which forms and remains fast along the coast

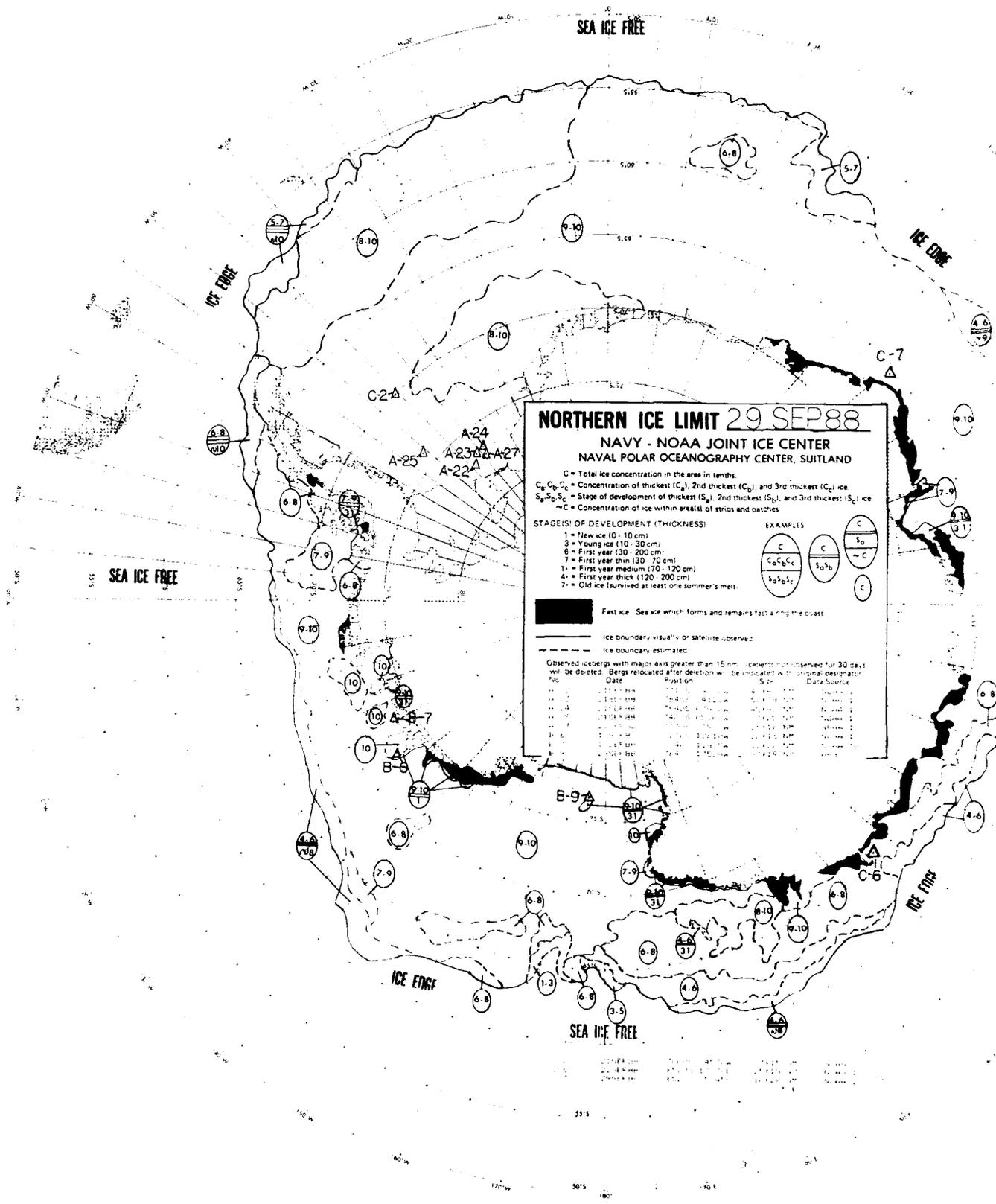
--- Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

Id	Date	Position	Size	Data Source
1	11-11-88	74°N 150°W	1000 x 1000	NSIC
2	11-11-88	74°N 150°W	1000 x 1000	NSIC
3	11-11-88	74°N 150°W	1000 x 1000	NSIC
4	11-11-88	74°N 150°W	1000 x 1000	NSIC
5	11-11-88	74°N 150°W	1000 x 1000	NSIC
6	11-11-88	74°N 150°W	1000 x 1000	NSIC
7	11-11-88	74°N 150°W	1000 x 1000	NSIC
8	11-11-88	74°N 150°W	1000 x 1000	NSIC

SEA ICE FREE

SEA ICE FREE



NORTHERN ICE LIMIT 29 SEP 88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice
 ~C = Concentration of ice within areals of strips and patches

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

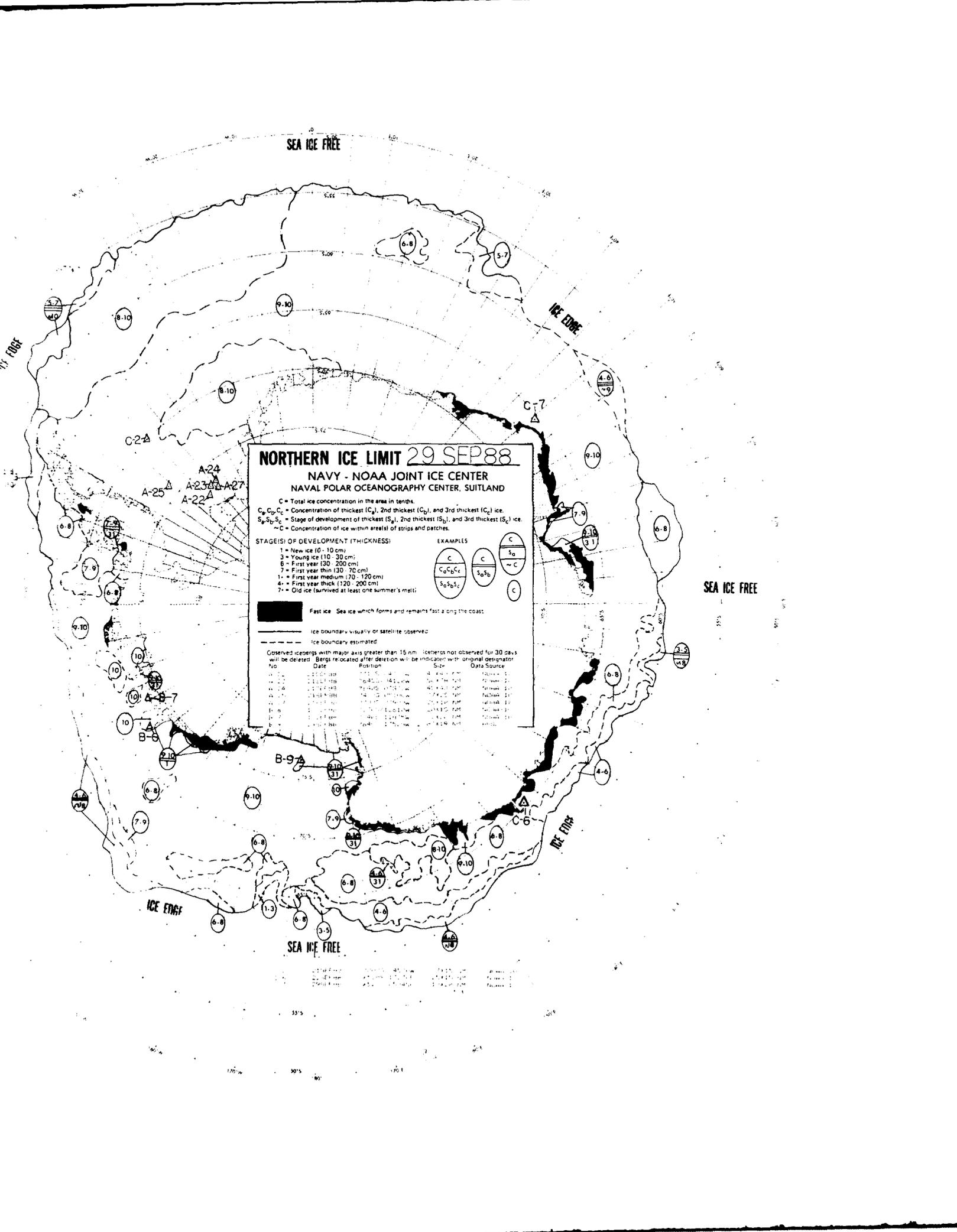
EXAMPLES

C	C	C
$C_1 C_2 C_3$	$S_1 S_2 S_3$	~C

Fast ice: Sea ice which forms and remains fast along the coast
 Ice boundary, visually or satellite observed
 Ice boundary, estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs re-located after deletion will be indicated with original designator.

No.	Date	Position	Size	Date source
1	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
2	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
3	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
4	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
5	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
6	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
7	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
8	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
9	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
10	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
11	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
12	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
13	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
14	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
15	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
16	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
17	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
18	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
19	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
20	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
21	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
22	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
23	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
24	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
25	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
26	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
27	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
28	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
29	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
30	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
31	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
32	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
33	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
34	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
35	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
36	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
37	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
38	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
39	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
40	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
41	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
42	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
43	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
44	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
45	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
46	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
47	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
48	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
49	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN
50	22-23 Sep	74.0 N, 157.0 W	400 x 100	USN



NORTHERN ICE LIMIT 29 SEP 88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
 -C = Concentration of ice within areals of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (10 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

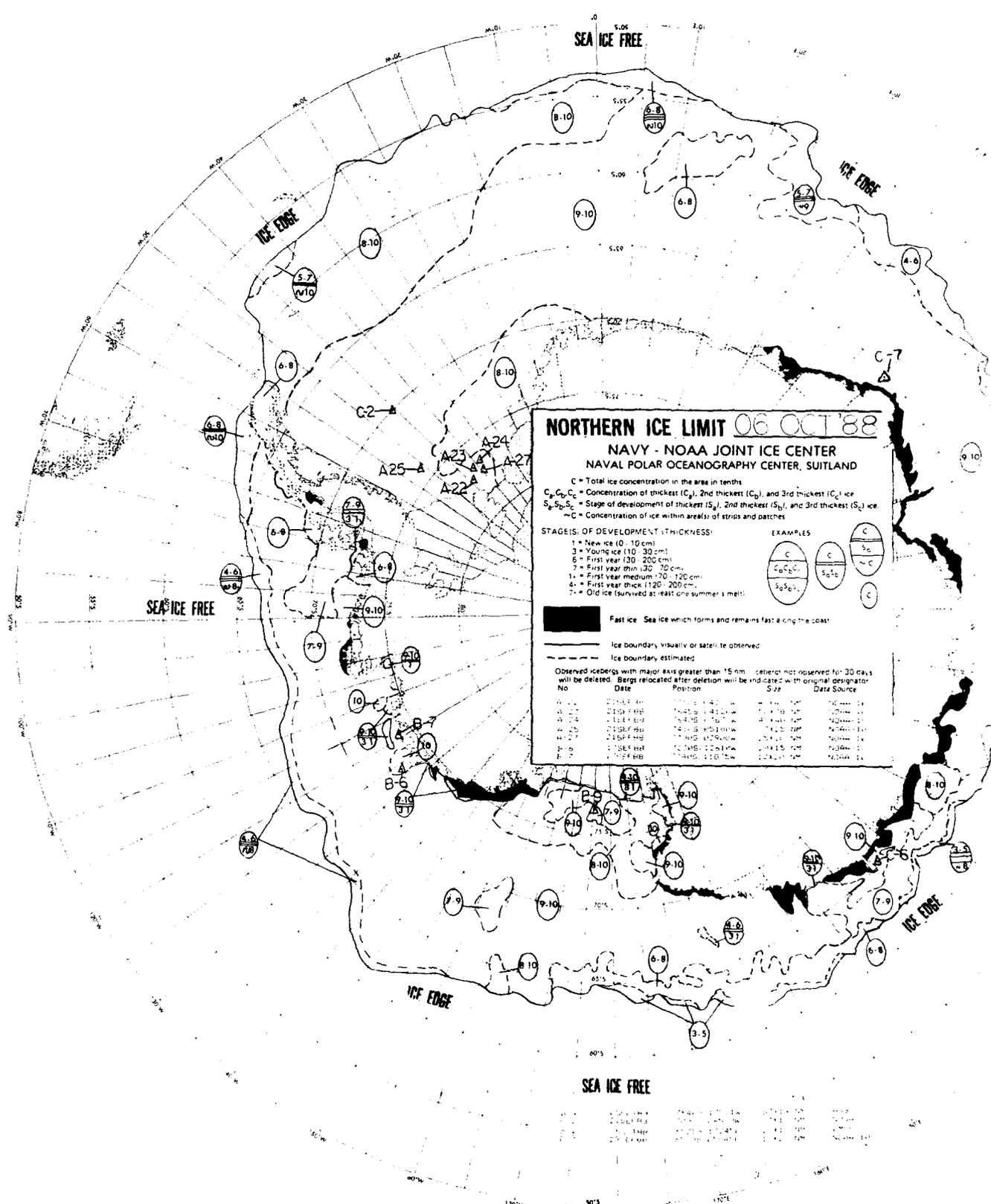
C	C	C
C ₁ C ₂ C ₃	S ₁ S ₂	-C
S ₁ S ₂ S ₃		C

Fast ice: Sea ice which forms and remains fast along the coast

--- ice boundary visually or satellite observed
 - - - - - ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
1	11 SEP 88	72°15'N 141°15'W	4 x 4 nm	NOAA-1
2	11 SEP 88	72°15'N 141°15'W	5 x 4 nm	NOAA-1
3	11 SEP 88	72°15'N 141°15'W	4 x 4 nm	NOAA-1
4	11 SEP 88	72°15'N 141°15'W	4 x 4 nm	NOAA-1
5	11 SEP 88	72°15'N 141°15'W	4 x 4 nm	NOAA-1
6	11 SEP 88	72°15'N 141°15'W	4 x 4 nm	NOAA-1
7	11 SEP 88	72°15'N 141°15'W	4 x 4 nm	NOAA-1
8	11 SEP 88	72°15'N 141°15'W	4 x 4 nm	NOAA-1
9	11 SEP 88	72°15'N 141°15'W	4 x 4 nm	NOAA-1
10	11 SEP 88	72°15'N 141°15'W	4 x 4 nm	NOAA-1



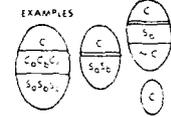
NORTHERN ICE LIMIT 06 OCT 88

NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 -C = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT & THICKNESS:

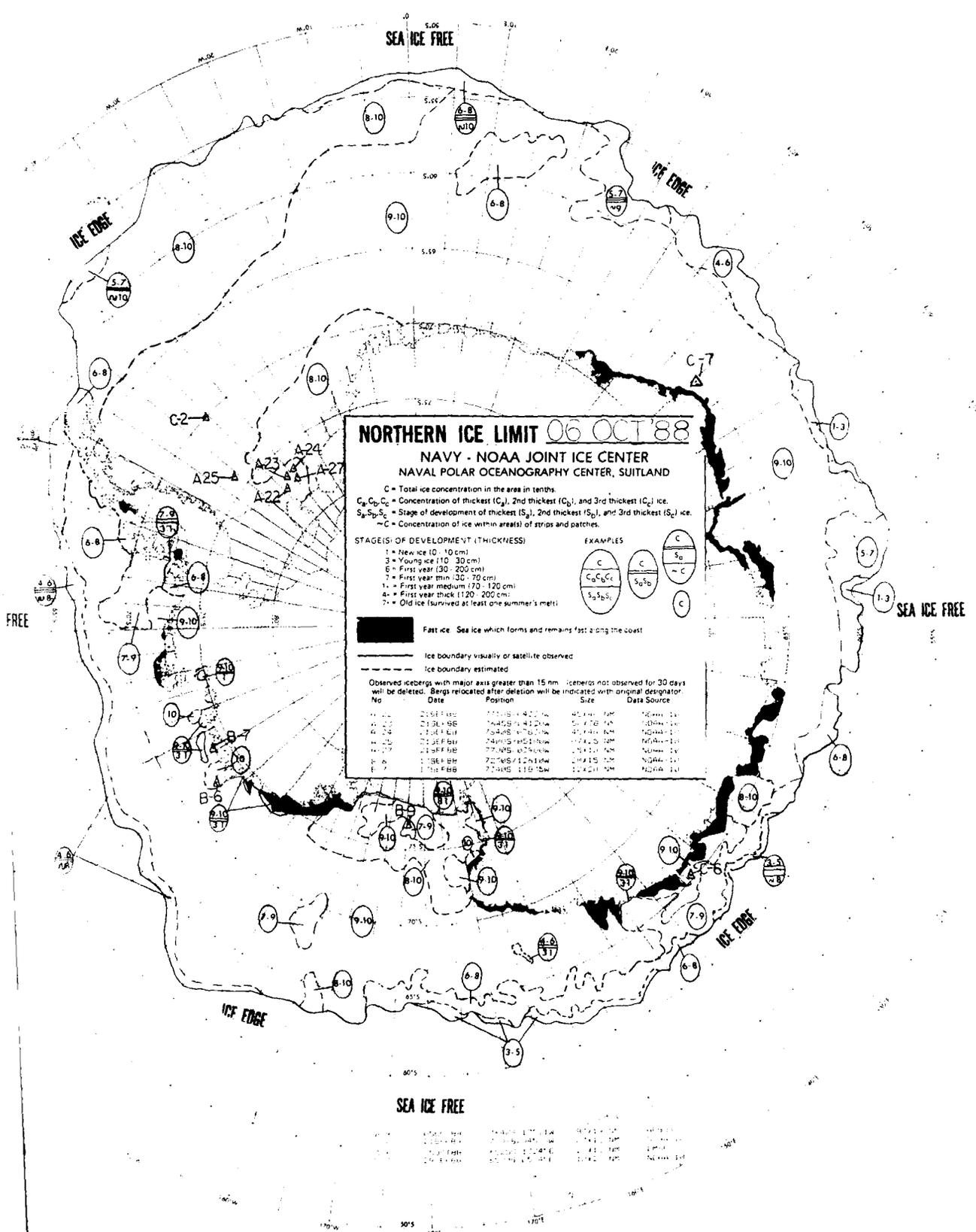
- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 8 = First year medium (70 - 120 cm)
- 9 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)



Fast ice: Sea ice which forms and remains fast along the coast
 Ice boundary, visually or satellite observed
 Ice boundary, estimated

Observed icebergs with major axis greater than 15 nm (center not observed for 30 days will be deleted). Bergs relocated after deletion will be indicated with original designator.

No	Date	Position	Size	Data Source
A-10	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
A-11	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
A-12	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
A-13	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
A-14	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
A-15	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
A-16	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
A-17	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
A-18	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
A-19	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
A-20	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
A-21	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
A-22	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
A-23	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
A-24	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
A-25	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-1	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-2	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-3	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-4	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-5	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-6	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-7	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-8	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-9	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-10	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-11	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-12	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-13	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-14	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-15	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-16	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-17	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-18	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-19	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-20	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-21	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-22	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-23	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-24	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-25	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-26	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-27	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-28	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-29	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-30	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-31	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-32	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-33	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-34	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-35	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-36	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-37	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-38	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-39	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-40	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-41	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-42	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-43	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-44	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-45	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-46	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-47	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-48	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-49	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC
B-50	21 SEP 88	74° 15' N 12° 15' W	1.5 x 1.5 km	NOAA/NSIC



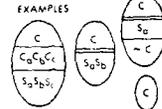
NORTHERN ICE LIMIT 06 OCT 88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year (30 - 200 cm)
- 4 = First year thin (30 - 70 cm)
- 5 = First year medium (70 - 120 cm)
- 6 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

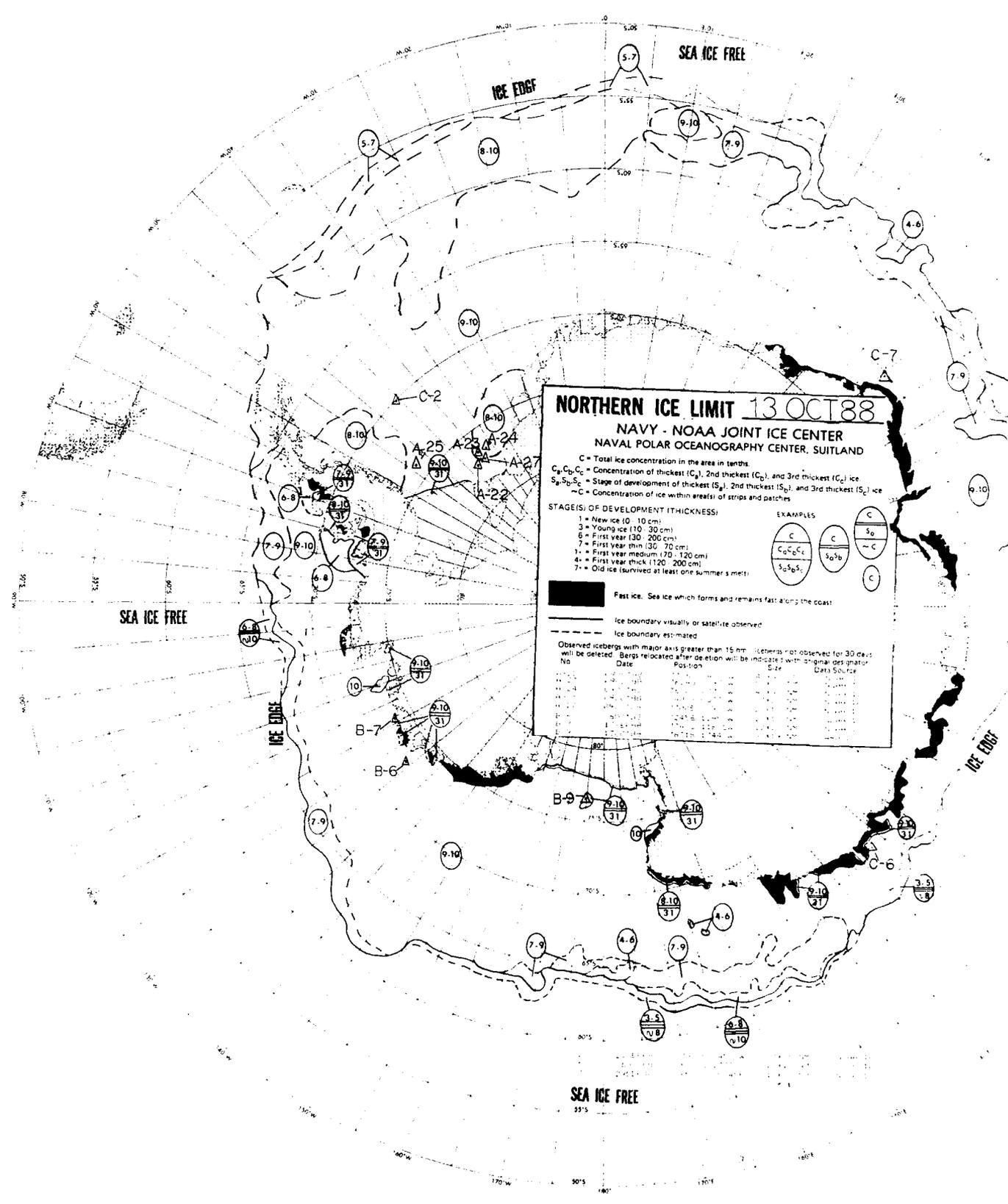


Fast ice - Sea ice which forms and remains fast along the coast
 Ice boundary visually or satellite observed
 Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
11	21 SE FEB	77°05'N 42°12'W	45 x 70 NM	NOAA-11
12	21 SE FEB	74°45'N 42°12'W	50 x 70 NM	NOAA-11
13	21 SE FEB	70°45'N 42°12'W	40 x 60 NM	NOAA-11
14	21 SE FEB	74°05'N 42°12'W	17 x 10 NM	NOAA-11
15	21 SE FEB	74°05'N 42°12'W	17 x 10 NM	NOAA-11
16	21 SE FEB	77°05'N 42°12'W	17 x 10 NM	NOAA-11
17	21 SE FEB	77°05'N 42°12'W	17 x 10 NM	NOAA-11
18	21 SE FEB	72°45'N 42°12'W	17 x 10 NM	NOAA-11
19	21 SE FEB	72°45'N 42°12'W	17 x 10 NM	NOAA-11

No.	Date	Position	Size	Data Source
20	21 SE FEB	74°05'N 42°12'W	17 x 10 NM	NOAA-11
21	21 SE FEB	74°05'N 42°12'W	17 x 10 NM	NOAA-11
22	21 SE FEB	74°05'N 42°12'W	17 x 10 NM	NOAA-11
23	21 SE FEB	74°05'N 42°12'W	17 x 10 NM	NOAA-11



NORTHERN ICE LIMIT 13 OCT 88

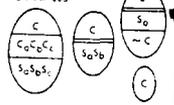
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice
 ~C = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS):

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year (30 - 200 cm)
- 4 = First year thin (30 - 70 cm)
- 5 = First year medium (70 - 120 cm)
- 6 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer melt)

EXAMPLES



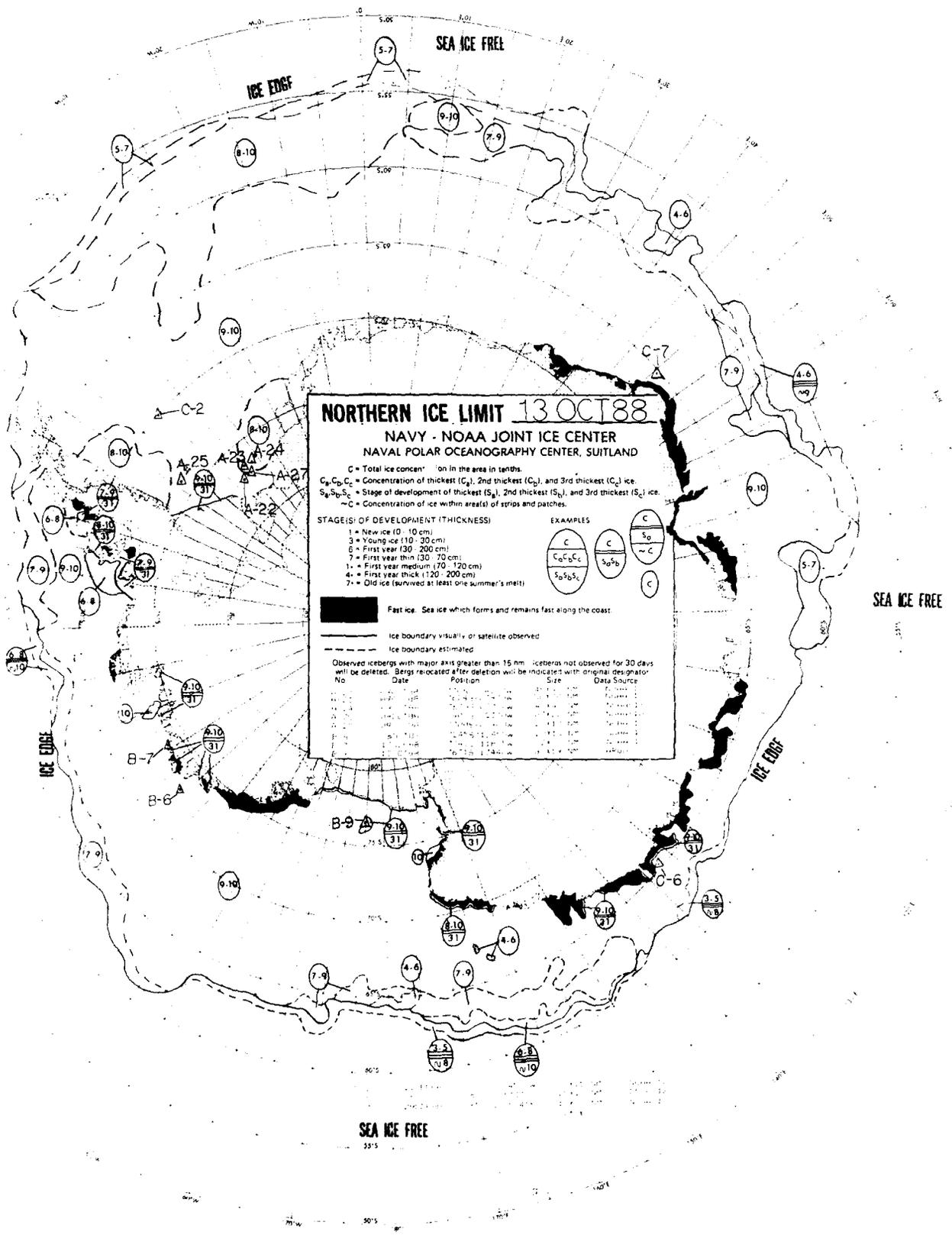
Fast ice: Sea ice which forms and remains fast along the coast

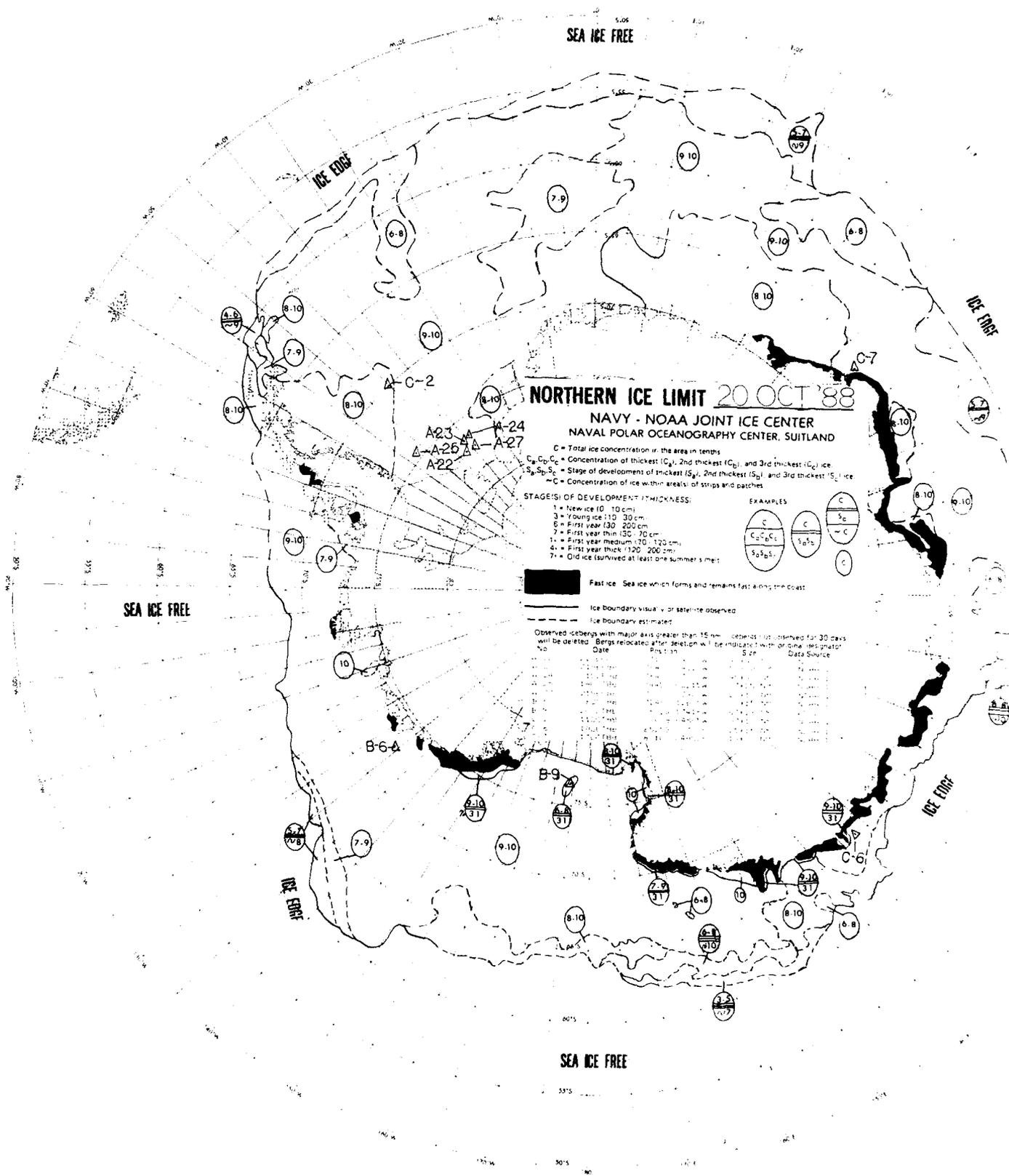
Ice boundary visually or satellite observed
 Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designation.

No.	Date	Position	Size	Data Source
1	10/13/88	75°N 150°W	100m x 200m	NAO
2	10/13/88	75°N 155°W	150m x 300m	NAO
3	10/13/88	75°N 160°W	200m x 400m	NAO
4	10/13/88	75°N 165°W	250m x 500m	NAO
5	10/13/88	75°N 170°W	300m x 600m	NAO
6	10/13/88	75°N 175°W	350m x 700m	NAO
7	10/13/88	75°N 180°W	400m x 800m	NAO
8	10/13/88	75°N 185°W	450m x 900m	NAO
9	10/13/88	75°N 190°W	500m x 1000m	NAO
10	10/13/88	75°N 195°W	550m x 1100m	NAO
11	10/13/88	75°N 200°W	600m x 1200m	NAO
12	10/13/88	75°N 205°W	650m x 1300m	NAO
13	10/13/88	75°N 210°W	700m x 1400m	NAO
14	10/13/88	75°N 215°W	750m x 1500m	NAO
15	10/13/88	75°N 220°W	800m x 1600m	NAO
16	10/13/88	75°N 225°W	850m x 1700m	NAO
17	10/13/88	75°N 230°W	900m x 1800m	NAO
18	10/13/88	75°N 235°W	950m x 1900m	NAO
19	10/13/88	75°N 240°W	1000m x 2000m	NAO
20	10/13/88	75°N 245°W	1050m x 2100m	NAO
21	10/13/88	75°N 250°W	1100m x 2200m	NAO
22	10/13/88	75°N 255°W	1150m x 2300m	NAO
23	10/13/88	75°N 260°W	1200m x 2400m	NAO
24	10/13/88	75°N 265°W	1250m x 2500m	NAO
25	10/13/88	75°N 270°W	1300m x 2600m	NAO
26	10/13/88	75°N 275°W	1350m x 2700m	NAO
27	10/13/88	75°N 280°W	1400m x 2800m	NAO
28	10/13/88	75°N 285°W	1450m x 2900m	NAO
29	10/13/88	75°N 290°W	1500m x 3000m	NAO
30	10/13/88	75°N 295°W	1550m x 3100m	NAO
31	10/13/88	75°N 300°W	1600m x 3200m	NAO
32	10/13/88	75°N 305°W	1650m x 3300m	NAO
33	10/13/88	75°N 310°W	1700m x 3400m	NAO
34	10/13/88	75°N 315°W	1750m x 3500m	NAO
35	10/13/88	75°N 320°W	1800m x 3600m	NAO
36	10/13/88	75°N 325°W	1850m x 3700m	NAO
37	10/13/88	75°N 330°W	1900m x 3800m	NAO
38	10/13/88	75°N 335°W	1950m x 3900m	NAO
39	10/13/88	75°N 340°W	2000m x 4000m	NAO
40	10/13/88	75°N 345°W	2050m x 4100m	NAO
41	10/13/88	75°N 350°W	2100m x 4200m	NAO
42	10/13/88	75°N 355°W	2150m x 4300m	NAO
43	10/13/88	75°N 360°W	2200m x 4400m	NAO
44	10/13/88	75°N 365°W	2250m x 4500m	NAO
45	10/13/88	75°N 370°W	2300m x 4600m	NAO
46	10/13/88	75°N 375°W	2350m x 4700m	NAO
47	10/13/88	75°N 380°W	2400m x 4800m	NAO
48	10/13/88	75°N 385°W	2450m x 4900m	NAO
49	10/13/88	75°N 390°W	2500m x 5000m	NAO
50	10/13/88	75°N 395°W	2550m x 5100m	NAO
51	10/13/88	75°N 400°W	2600m x 5200m	NAO
52	10/13/88	75°N 405°W	2650m x 5300m	NAO
53	10/13/88	75°N 410°W	2700m x 5400m	NAO
54	10/13/88	75°N 415°W	2750m x 5500m	NAO
55	10/13/88	75°N 420°W	2800m x 5600m	NAO
56	10/13/88	75°N 425°W	2850m x 5700m	NAO
57	10/13/88	75°N 430°W	2900m x 5800m	NAO
58	10/13/88	75°N 435°W	2950m x 5900m	NAO
59	10/13/88	75°N 440°W	3000m x 6000m	NAO
60	10/13/88	75°N 445°W	3050m x 6100m	NAO
61	10/13/88	75°N 450°W	3100m x 6200m	NAO
62	10/13/88	75°N 455°W	3150m x 6300m	NAO
63	10/13/88	75°N 460°W	3200m x 6400m	NAO
64	10/13/88	75°N 465°W	3250m x 6500m	NAO
65	10/13/88	75°N 470°W	3300m x 6600m	NAO
66	10/13/88	75°N 475°W	3350m x 6700m	NAO
67	10/13/88	75°N 480°W	3400m x 6800m	NAO
68	10/13/88	75°N 485°W	3450m x 6900m	NAO
69	10/13/88	75°N 490°W	3500m x 7000m	NAO
70	10/13/88	75°N 495°W	3550m x 7100m	NAO
71	10/13/88	75°N 500°W	3600m x 7200m	NAO
72	10/13/88	75°N 505°W	3650m x 7300m	NAO
73	10/13/88	75°N 510°W	3700m x 7400m	NAO
74	10/13/88	75°N 515°W	3750m x 7500m	NAO
75	10/13/88	75°N 520°W	3800m x 7600m	NAO
76	10/13/88	75°N 525°W	3850m x 7700m	NAO
77	10/13/88	75°N 530°W	3900m x 7800m	NAO
78	10/13/88	75°N 535°W	3950m x 7900m	NAO
79	10/13/88	75°N 540°W	4000m x 8000m	NAO
80	10/13/88	75°N 545°W	4050m x 8100m	NAO
81	10/13/88	75°N 550°W	4100m x 8200m	NAO
82	10/13/88	75°N 555°W	4150m x 8300m	NAO
83	10/13/88	75°N 560°W	4200m x 8400m	NAO
84	10/13/88	75°N 565°W	4250m x 8500m	NAO
85	10/13/88	75°N 570°W	4300m x 8600m	NAO
86	10/13/88	75°N 575°W	4350m x 8700m	NAO
87	10/13/88	75°N 580°W	4400m x 8800m	NAO
88	10/13/88	75°N 585°W	4450m x 8900m	NAO
89	10/13/88	75°N 590°W	4500m x 9000m	NAO
90	10/13/88	75°N 595°W	4550m x 9100m	NAO
91	10/13/88	75°N 600°W	4600m x 9200m	NAO
92	10/13/88	75°N 605°W	4650m x 9300m	NAO
93	10/13/88	75°N 610°W	4700m x 9400m	NAO
94	10/13/88	75°N 615°W	4750m x 9500m	NAO
95	10/13/88	75°N 620°W	4800m x 9600m	NAO
96	10/13/88	75°N 625°W	4850m x 9700m	NAO
97	10/13/88	75°N 630°W	4900m x 9800m	NAO
98	10/13/88	75°N 635°W	4950m x 9900m	NAO
99	10/13/88	75°N 640°W	5000m x 10000m	NAO

SEA ICE FREE



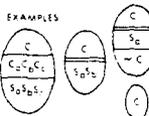


NORTHERN ICE LIMIT 20 OCT '88

NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 -C = Concentration of ice within areas of strips and patches

- STAGE(S) OF DEVELOPMENT BY THICKNESS:
- 1 = New ice (0 - 10 cm)
 - 2 = Young ice (10 - 30 cm)
 - 3 = First year (30 - 200 cm)
 - 4 = First year thin (20 - 70 cm)
 - 5 = First year medium (70 - 120 cm)
 - 6 = First year thick (120 - 200 cm)
 - 7 = Old ice (survived at least one summer's melt)



Fast ice: Sea ice which forms and remains fast along the coast
 Ice boundary: visual or satellite observed
 Ice boundary: estimated

Observed icebergs with major axis greater than 15 nm will be deleted. Bergs relocated after detection will be indicated with original designator.

No.	Date	Position	Size	Data Source
1	11 Oct	75°N 150°W	100m x 100m	ASD
2	11 Oct	75°N 150°W	100m x 100m	ASD
3	11 Oct	75°N 150°W	100m x 100m	ASD
4	11 Oct	75°N 150°W	100m x 100m	ASD
5	11 Oct	75°N 150°W	100m x 100m	ASD
6	11 Oct	75°N 150°W	100m x 100m	ASD
7	11 Oct	75°N 150°W	100m x 100m	ASD
8	11 Oct	75°N 150°W	100m x 100m	ASD
9	11 Oct	75°N 150°W	100m x 100m	ASD
10	11 Oct	75°N 150°W	100m x 100m	ASD
11	11 Oct	75°N 150°W	100m x 100m	ASD
12	11 Oct	75°N 150°W	100m x 100m	ASD
13	11 Oct	75°N 150°W	100m x 100m	ASD
14	11 Oct	75°N 150°W	100m x 100m	ASD
15	11 Oct	75°N 150°W	100m x 100m	ASD
16	11 Oct	75°N 150°W	100m x 100m	ASD
17	11 Oct	75°N 150°W	100m x 100m	ASD
18	11 Oct	75°N 150°W	100m x 100m	ASD
19	11 Oct	75°N 150°W	100m x 100m	ASD
20	11 Oct	75°N 150°W	100m x 100m	ASD
21	11 Oct	75°N 150°W	100m x 100m	ASD
22	11 Oct	75°N 150°W	100m x 100m	ASD
23	11 Oct	75°N 150°W	100m x 100m	ASD
24	11 Oct	75°N 150°W	100m x 100m	ASD
25	11 Oct	75°N 150°W	100m x 100m	ASD
26	11 Oct	75°N 150°W	100m x 100m	ASD
27	11 Oct	75°N 150°W	100m x 100m	ASD
28	11 Oct	75°N 150°W	100m x 100m	ASD
29	11 Oct	75°N 150°W	100m x 100m	ASD
30	11 Oct	75°N 150°W	100m x 100m	ASD
31	11 Oct	75°N 150°W	100m x 100m	ASD
32	11 Oct	75°N 150°W	100m x 100m	ASD
33	11 Oct	75°N 150°W	100m x 100m	ASD
34	11 Oct	75°N 150°W	100m x 100m	ASD
35	11 Oct	75°N 150°W	100m x 100m	ASD
36	11 Oct	75°N 150°W	100m x 100m	ASD
37	11 Oct	75°N 150°W	100m x 100m	ASD
38	11 Oct	75°N 150°W	100m x 100m	ASD
39	11 Oct	75°N 150°W	100m x 100m	ASD
40	11 Oct	75°N 150°W	100m x 100m	ASD
41	11 Oct	75°N 150°W	100m x 100m	ASD
42	11 Oct	75°N 150°W	100m x 100m	ASD
43	11 Oct	75°N 150°W	100m x 100m	ASD
44	11 Oct	75°N 150°W	100m x 100m	ASD
45	11 Oct	75°N 150°W	100m x 100m	ASD
46	11 Oct	75°N 150°W	100m x 100m	ASD
47	11 Oct	75°N 150°W	100m x 100m	ASD
48	11 Oct	75°N 150°W	100m x 100m	ASD
49	11 Oct	75°N 150°W	100m x 100m	ASD
50	11 Oct	75°N 150°W	100m x 100m	ASD

SEA ICE FREE

ICE EDGE

ICE EDGE

SEA ICE FREE

ICE EDGE

ICE EDGE

SEA ICE FREE

NORTHERN ICE LIMIT 20 OCT '88

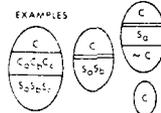
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

- C = Total ice concentration in the area in tenths
- C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
- S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
- C = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS):

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year thin (30 - 70 cm)
- 4 = First year medium (70 - 120 cm)
- 5 = First year thick (120 - 200 cm)
- 6 = Old ice (survived at least one summer's melt)

EXAMPLES

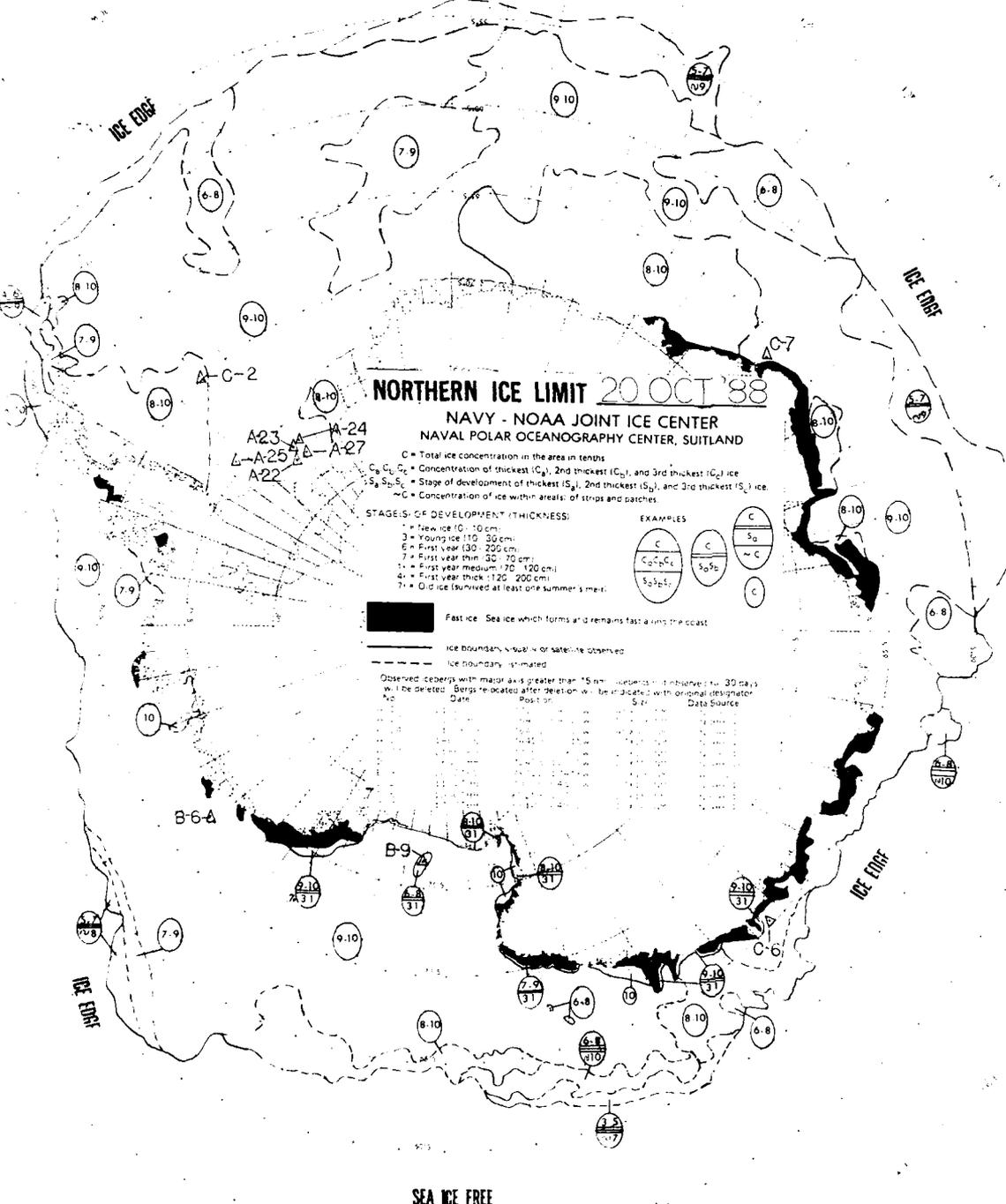


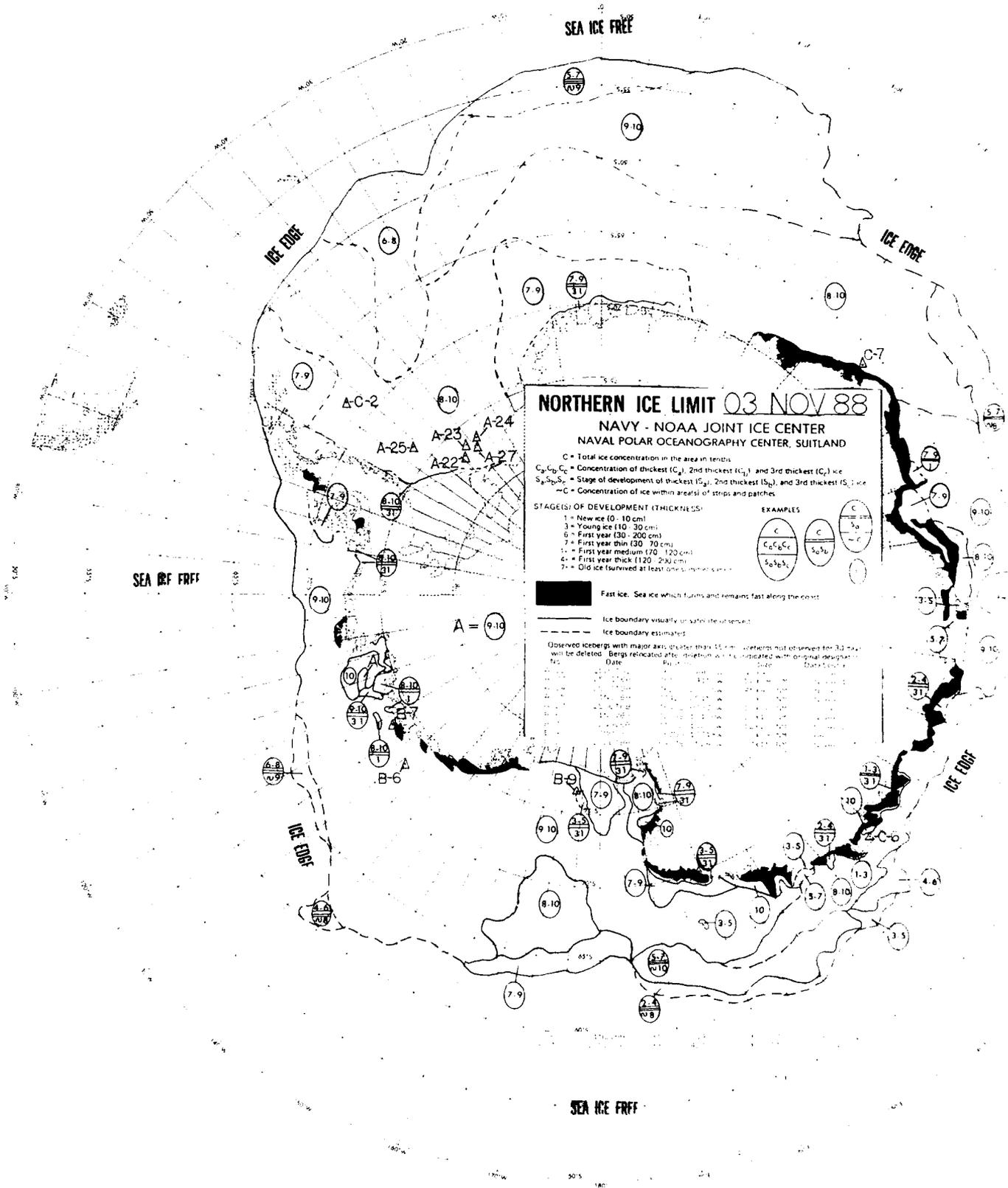
Fast ice: Sea ice which forms and remains fast to the coast

Ice boundary: visible or satellite observed
Ice boundary: estimated

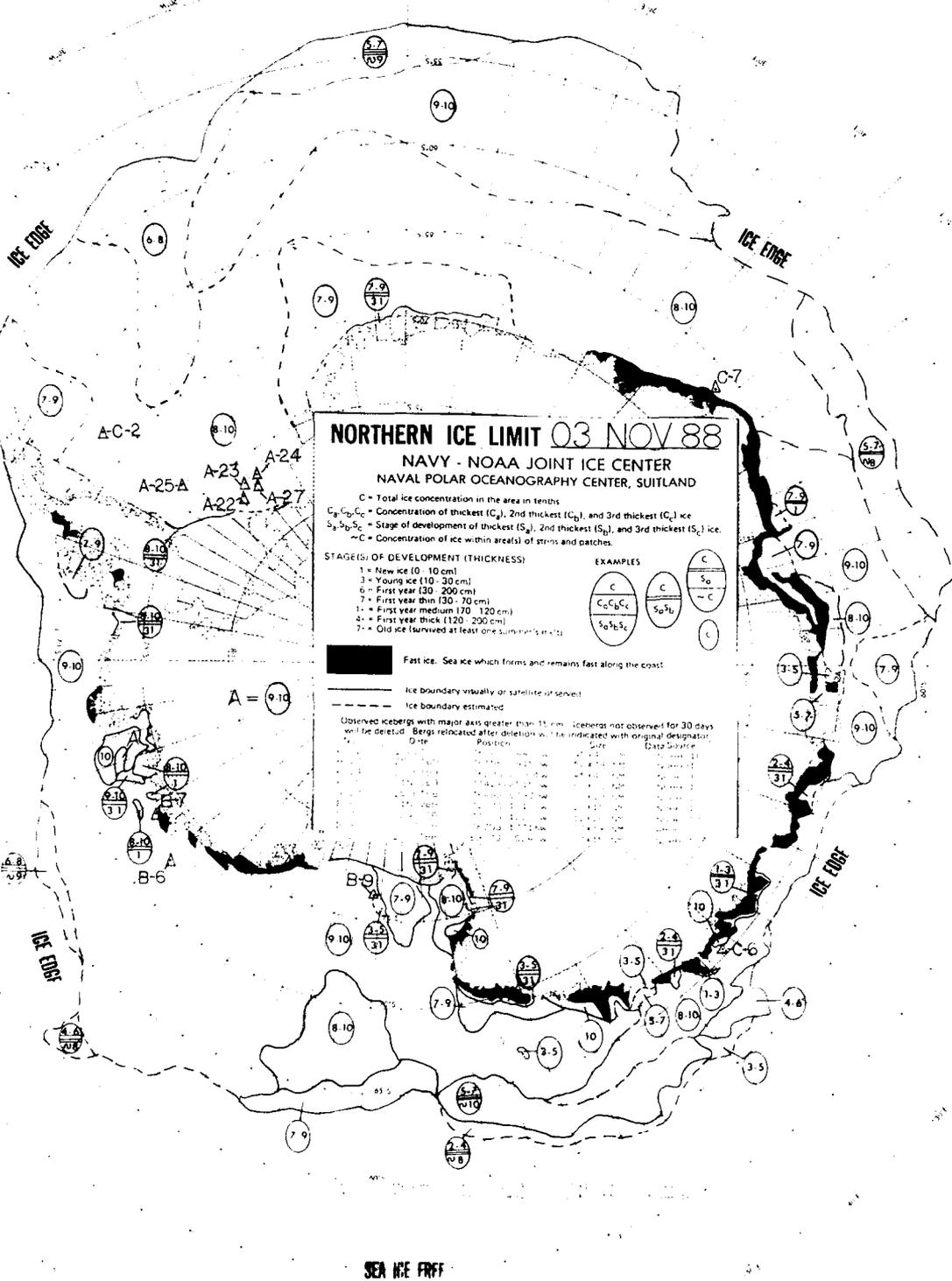
Observed icebergs with major axis greater than 5 m (subject to observation to 30 days) will be deleted. Bergs re-located after deletion will be indicated with original designator.

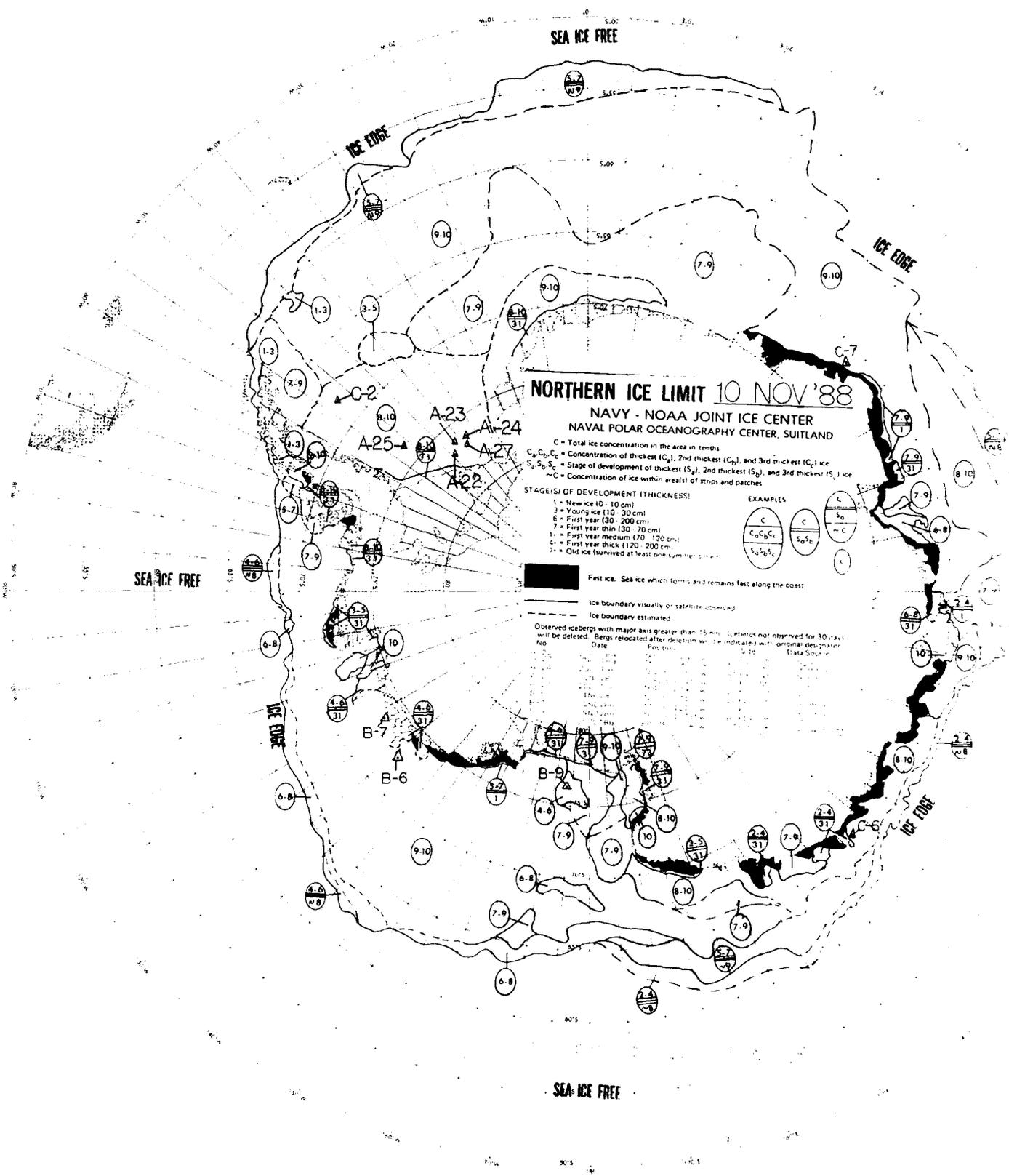
No.	Date	Pos. Lat	Pos. Lon	Data Source
1	10/10	70.0	150.0	ASD
2	10/10	70.0	150.0	ASD
3	10/10	70.0	150.0	ASD
4	10/10	70.0	150.0	ASD
5	10/10	70.0	150.0	ASD
6	10/10	70.0	150.0	ASD
7	10/10	70.0	150.0	ASD
8	10/10	70.0	150.0	ASD
9	10/10	70.0	150.0	ASD
10	10/10	70.0	150.0	ASD
11	10/10	70.0	150.0	ASD
12	10/10	70.0	150.0	ASD
13	10/10	70.0	150.0	ASD
14	10/10	70.0	150.0	ASD
15	10/10	70.0	150.0	ASD
16	10/10	70.0	150.0	ASD
17	10/10	70.0	150.0	ASD
18	10/10	70.0	150.0	ASD
19	10/10	70.0	150.0	ASD
20	10/10	70.0	150.0	ASD
21	10/10	70.0	150.0	ASD
22	10/10	70.0	150.0	ASD
23	10/10	70.0	150.0	ASD
24	10/10	70.0	150.0	ASD
25	10/10	70.0	150.0	ASD
26	10/10	70.0	150.0	ASD
27	10/10	70.0	150.0	ASD
28	10/10	70.0	150.0	ASD
29	10/10	70.0	150.0	ASD
30	10/10	70.0	150.0	ASD
31	10/10	70.0	150.0	ASD
32	10/10	70.0	150.0	ASD
33	10/10	70.0	150.0	ASD
34	10/10	70.0	150.0	ASD
35	10/10	70.0	150.0	ASD
36	10/10	70.0	150.0	ASD
37	10/10	70.0	150.0	ASD
38	10/10	70.0	150.0	ASD
39	10/10	70.0	150.0	ASD
40	10/10	70.0	150.0	ASD
41	10/10	70.0	150.0	ASD
42	10/10	70.0	150.0	ASD
43	10/10	70.0	150.0	ASD
44	10/10	70.0	150.0	ASD
45	10/10	70.0	150.0	ASD
46	10/10	70.0	150.0	ASD
47	10/10	70.0	150.0	ASD
48	10/10	70.0	150.0	ASD
49	10/10	70.0	150.0	ASD
50	10/10	70.0	150.0	ASD
51	10/10	70.0	150.0	ASD
52	10/10	70.0	150.0	ASD
53	10/10	70.0	150.0	ASD
54	10/10	70.0	150.0	ASD
55	10/10	70.0	150.0	ASD
56	10/10	70.0	150.0	ASD
57	10/10	70.0	150.0	ASD
58	10/10	70.0	150.0	ASD
59	10/10	70.0	150.0	ASD
60	10/10	70.0	150.0	ASD
61	10/10	70.0	150.0	ASD
62	10/10	70.0	150.0	ASD
63	10/10	70.0	150.0	ASD
64	10/10	70.0	150.0	ASD
65	10/10	70.0	150.0	ASD
66	10/10	70.0	150.0	ASD
67	10/10	70.0	150.0	ASD
68	10/10	70.0	150.0	ASD
69	10/10	70.0	150.0	ASD
70	10/10	70.0	150.0	ASD
71	10/10	70.0	150.0	ASD
72	10/10	70.0	150.0	ASD
73	10/10	70.0	150.0	ASD
74	10/10	70.0	150.0	ASD
75	10/10	70.0	150.0	ASD
76	10/10	70.0	150.0	ASD
77	10/10	70.0	150.0	ASD
78	10/10	70.0	150.0	ASD
79	10/10	70.0	150.0	ASD
80	10/10	70.0	150.0	ASD
81	10/10	70.0	150.0	ASD
82	10/10	70.0	150.0	ASD
83	10/10	70.0	150.0	ASD
84	10/10	70.0	150.0	ASD
85	10/10	70.0	150.0	ASD
86	10/10	70.0	150.0	ASD
87	10/10	70.0	150.0	ASD
88	10/10	70.0	150.0	ASD
89	10/10	70.0	150.0	ASD
90	10/10	70.0	150.0	ASD
91	10/10	70.0	150.0	ASD
92	10/10	70.0	150.0	ASD
93	10/10	70.0	150.0	ASD
94	10/10	70.0	150.0	ASD
95	10/10	70.0	150.0	ASD
96	10/10	70.0	150.0	ASD
97	10/10	70.0	150.0	ASD
98	10/10	70.0	150.0	ASD
99	10/10	70.0	150.0	ASD
100	10/10	70.0	150.0	ASD

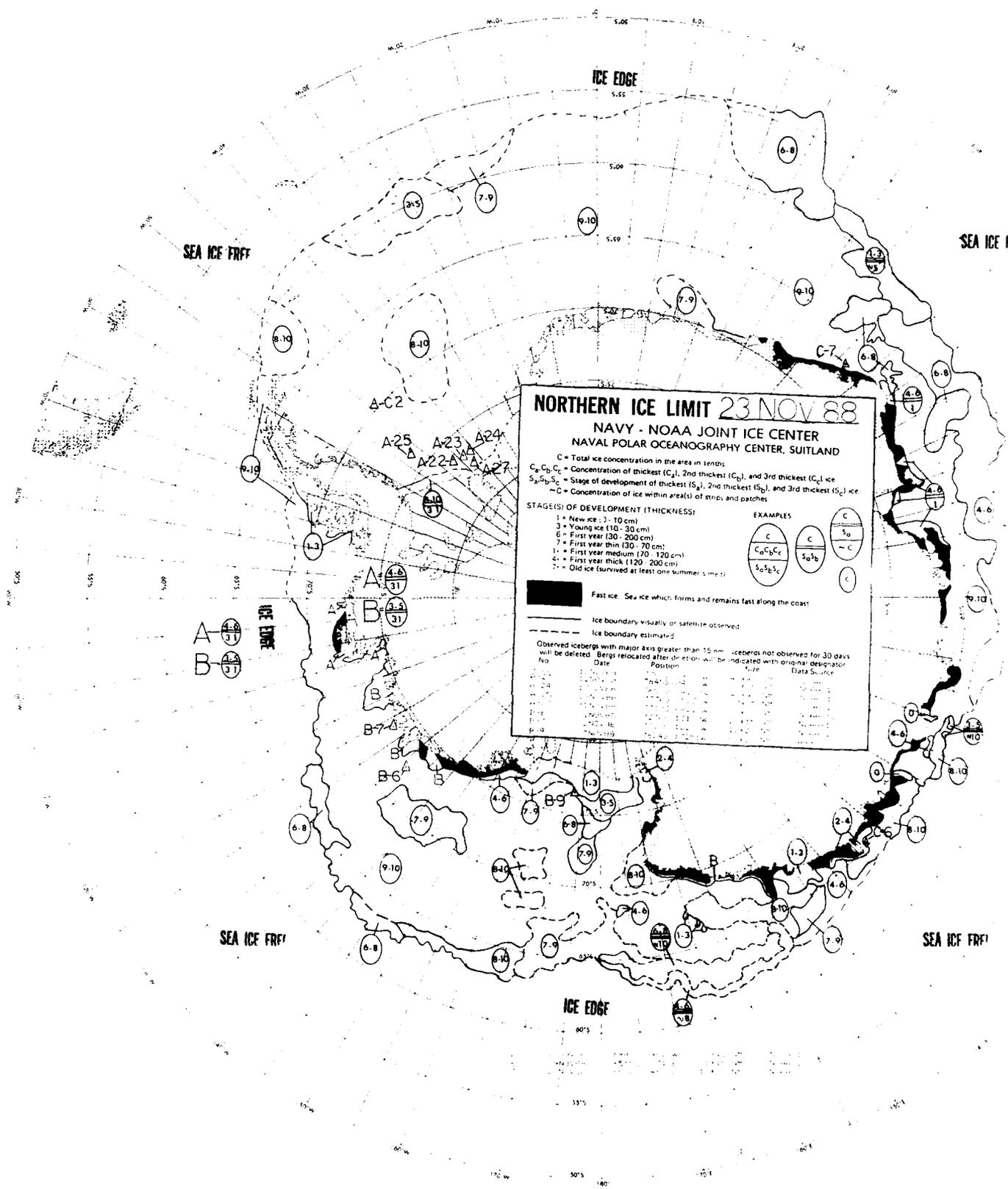




SEA ICE FREE







NORTHERN ICE LIMIT 23 NOV 88

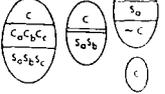
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice
 ~C = Concentration of ice within areas of strips and patches

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (3 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 2 = Old ice (survived at least one summer melt)

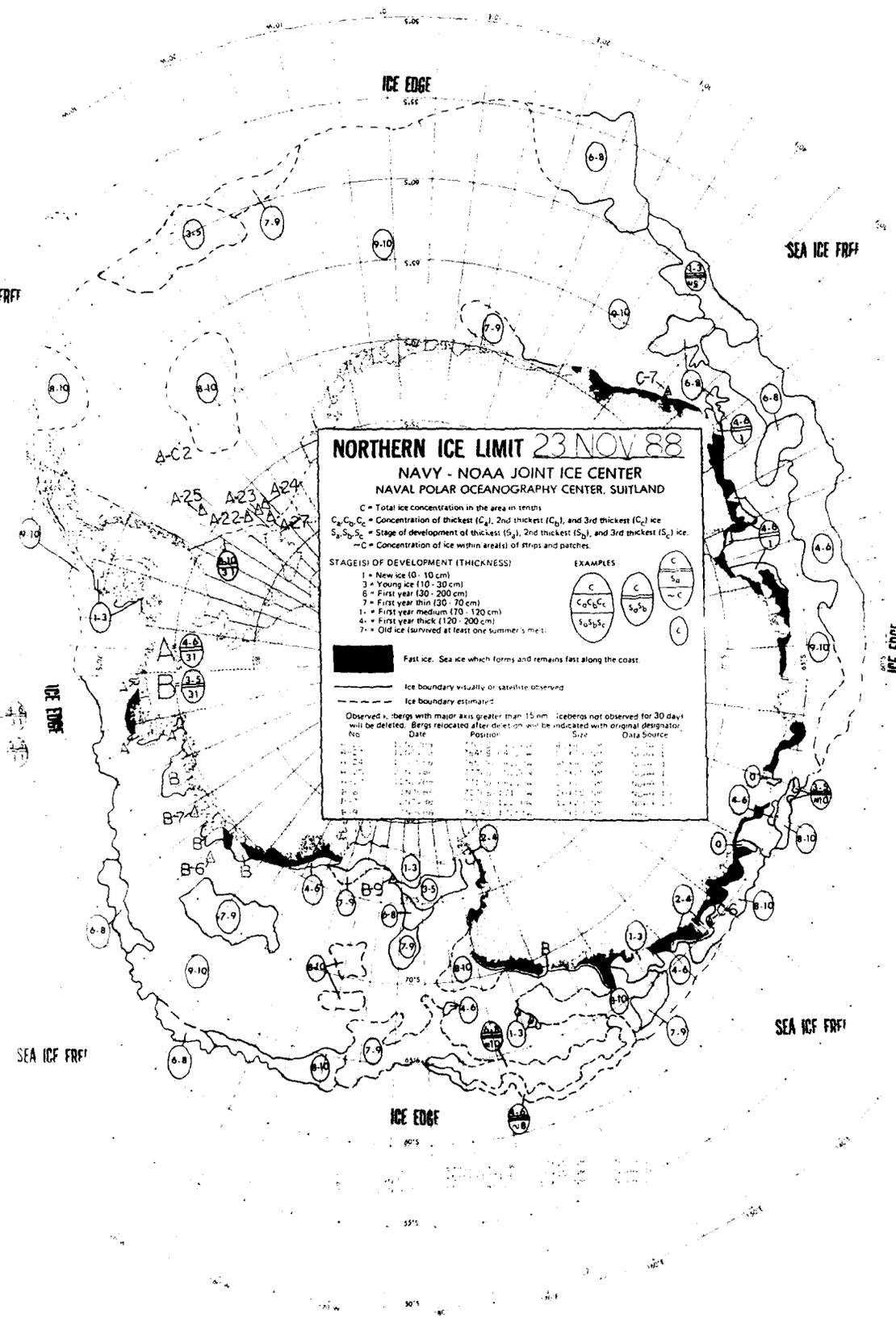
EXAMPLES



- Fast ice: Sea ice which forms and remains fast along the coast
- Ice boundary visually or satellite observed
- Ice boundary estimated

Observed icebergs with major axis greater than 15 km. Icebergs not observed for 30 days will be deleted. Bergs relocated after detection will be indicated with original designator.

No.	Date	Position	Size	Data Source
1	11/23/88	70°N 150°W	100 x 200	NOAA
2	11/23/88	70°N 155°W	150 x 300	NOAA
3	11/23/88	70°N 160°W	200 x 400	NOAA
4	11/23/88	70°N 165°W	250 x 500	NOAA
5	11/23/88	70°N 170°W	300 x 600	NOAA
6	11/23/88	70°N 175°W	350 x 700	NOAA
7	11/23/88	70°N 180°W	400 x 800	NOAA
8	11/23/88	70°N 185°W	450 x 900	NOAA
9	11/23/88	70°N 190°W	500 x 1000	NOAA
10	11/23/88	70°N 195°W	550 x 1100	NOAA



NORTHERN ICE LIMIT 23 NOV 88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice
 T = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS):

- 1 = New ice (0 - 10 cm)
- 3 = Young ice (10 - 30 cm)
- 6 = First year (30 - 200 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

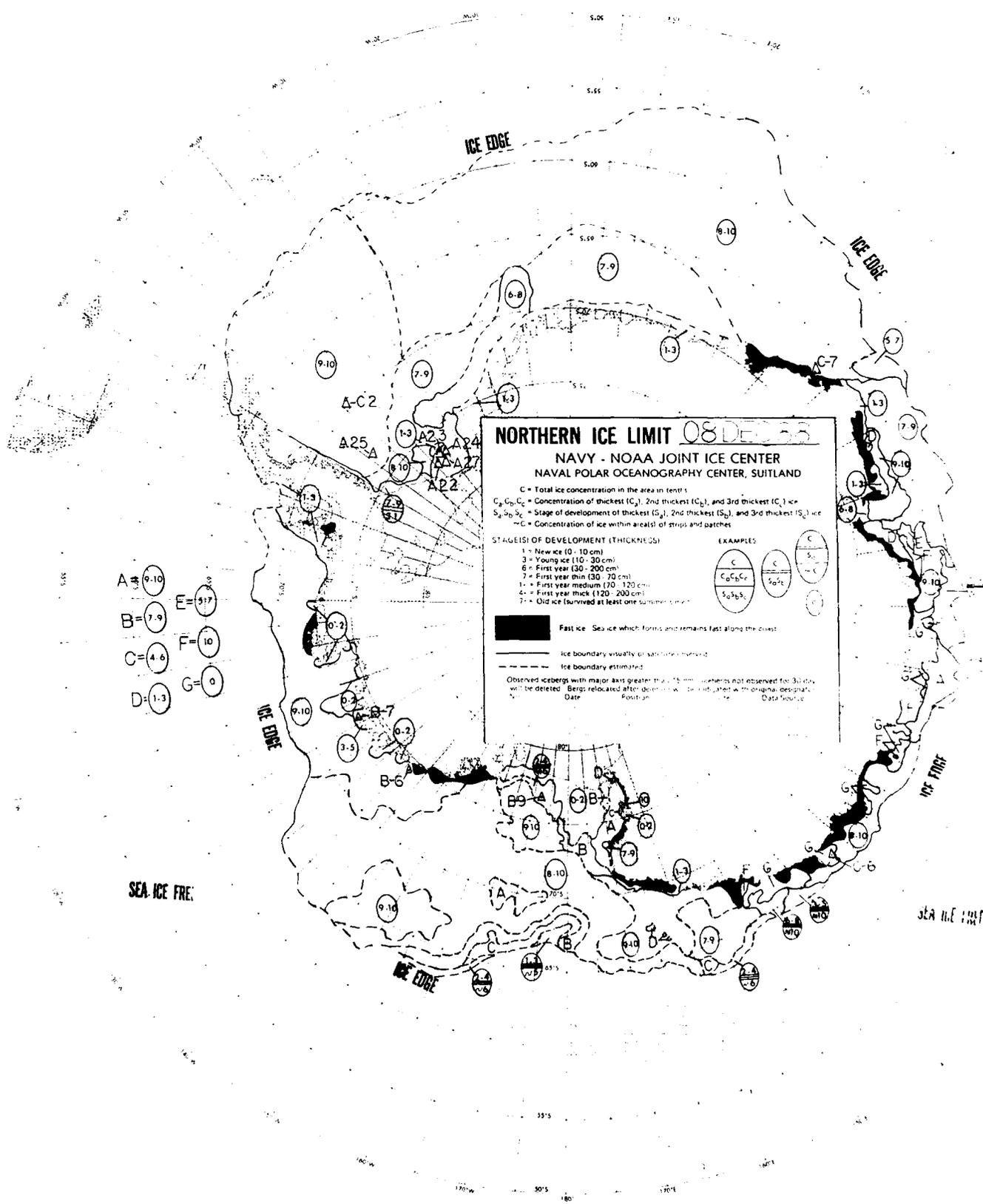
EXAMPLES

Fast ice: Sea ice which forms and remains fast along the coast.

Ice boundary visually or satellite observed
 Ice boundary estimate

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

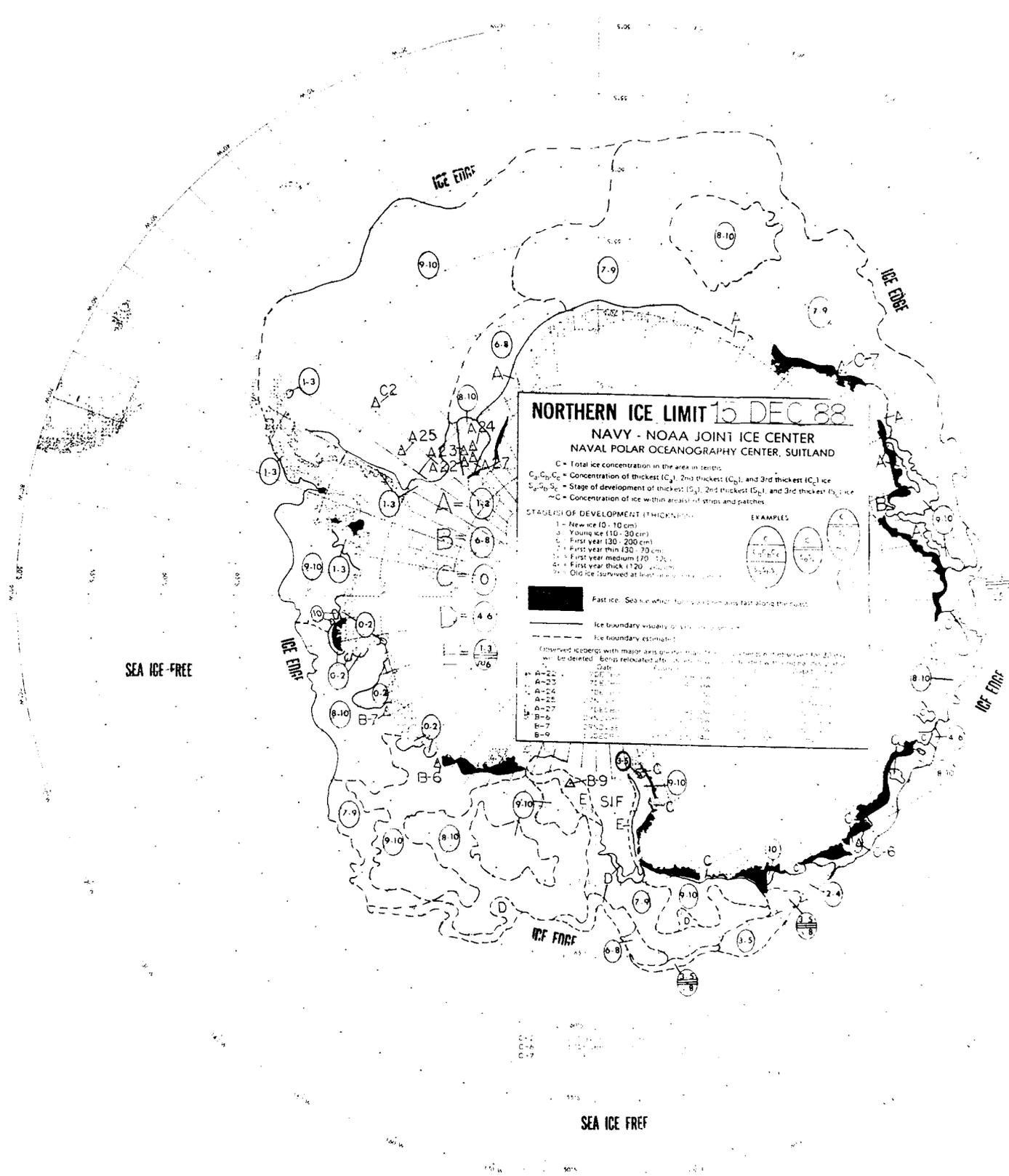
No.	Date	Position	Size	Data Source
A-1	11/20/88	72°N 15°E	100 x 100	NAO
A-2	11/20/88	72°N 15°E	100 x 100	NAO
A-3	11/20/88	72°N 15°E	100 x 100	NAO
A-4	11/20/88	72°N 15°E	100 x 100	NAO
A-5	11/20/88	72°N 15°E	100 x 100	NAO
A-6	11/20/88	72°N 15°E	100 x 100	NAO
A-7	11/20/88	72°N 15°E	100 x 100	NAO
A-8	11/20/88	72°N 15°E	100 x 100	NAO
A-9	11/20/88	72°N 15°E	100 x 100	NAO
A-10	11/20/88	72°N 15°E	100 x 100	NAO
A-11	11/20/88	72°N 15°E	100 x 100	NAO
A-12	11/20/88	72°N 15°E	100 x 100	NAO
A-13	11/20/88	72°N 15°E	100 x 100	NAO
A-14	11/20/88	72°N 15°E	100 x 100	NAO
A-15	11/20/88	72°N 15°E	100 x 100	NAO
A-16	11/20/88	72°N 15°E	100 x 100	NAO
A-17	11/20/88	72°N 15°E	100 x 100	NAO
A-18	11/20/88	72°N 15°E	100 x 100	NAO
A-19	11/20/88	72°N 15°E	100 x 100	NAO
A-20	11/20/88	72°N 15°E	100 x 100	NAO
A-21	11/20/88	72°N 15°E	100 x 100	NAO
A-22	11/20/88	72°N 15°E	100 x 100	NAO
A-23	11/20/88	72°N 15°E	100 x 100	NAO
A-24	11/20/88	72°N 15°E	100 x 100	NAO
A-25	11/20/88	72°N 15°E	100 x 100	NAO
B-1	11/20/88	72°N 15°E	100 x 100	NAO
B-2	11/20/88	72°N 15°E	100 x 100	NAO
B-3	11/20/88	72°N 15°E	100 x 100	NAO
B-4	11/20/88	72°N 15°E	100 x 100	NAO
B-5	11/20/88	72°N 15°E	100 x 100	NAO
B-6	11/20/88	72°N 15°E	100 x 100	NAO
B-7	11/20/88	72°N 15°E	100 x 100	NAO
B-8	11/20/88	72°N 15°E	100 x 100	NAO
B-9	11/20/88	72°N 15°E	100 x 100	NAO
B-10	11/20/88	72°N 15°E	100 x 100	NAO
B-11	11/20/88	72°N 15°E	100 x 100	NAO
B-12	11/20/88	72°N 15°E	100 x 100	NAO
B-13	11/20/88	72°N 15°E	100 x 100	NAO
B-14	11/20/88	72°N 15°E	100 x 100	NAO
B-15	11/20/88	72°N 15°E	100 x 100	NAO
B-16	11/20/88	72°N 15°E	100 x 100	NAO
B-17	11/20/88	72°N 15°E	100 x 100	NAO
B-18	11/20/88	72°N 15°E	100 x 100	NAO
B-19	11/20/88	72°N 15°E	100 x 100	NAO
B-20	11/20/88	72°N 15°E	100 x 100	NAO
B-21	11/20/88	72°N 15°E	100 x 100	NAO
B-22	11/20/88	72°N 15°E	100 x 100	NAO
B-23	11/20/88	72°N 15°E	100 x 100	NAO
B-24	11/20/88	72°N 15°E	100 x 100	NAO
B-25	11/20/88	72°N 15°E	100 x 100	NAO



- A = 9-10
- B = 7-9
- C = 4-6
- D = 1-3
- E = 9-17
- F = 10
- G = 0

SEA ICE FREE

SEA ICE FREE



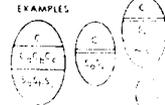
NORTHERN ICE LIMIT 15 DEC 88

NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C₁, C₂, C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice
 S₁, S₂, S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice
 ~C = Concentration of ice within areas of strips and patches

STAGES OF DEVELOPMENT (THICKNESS)

- 1 - New ice (10 - 10 cm)
- 2 - Young ice (10 - 30 cm)
- 3 - First year (30 - 200 cm)
- 4 - First year thin (30 - 70 cm)
- 5 - First year medium (70 - 120 cm)
- 6 - First year thick (120 - 200 cm)
- 7 - Old ice (survived at least one season)



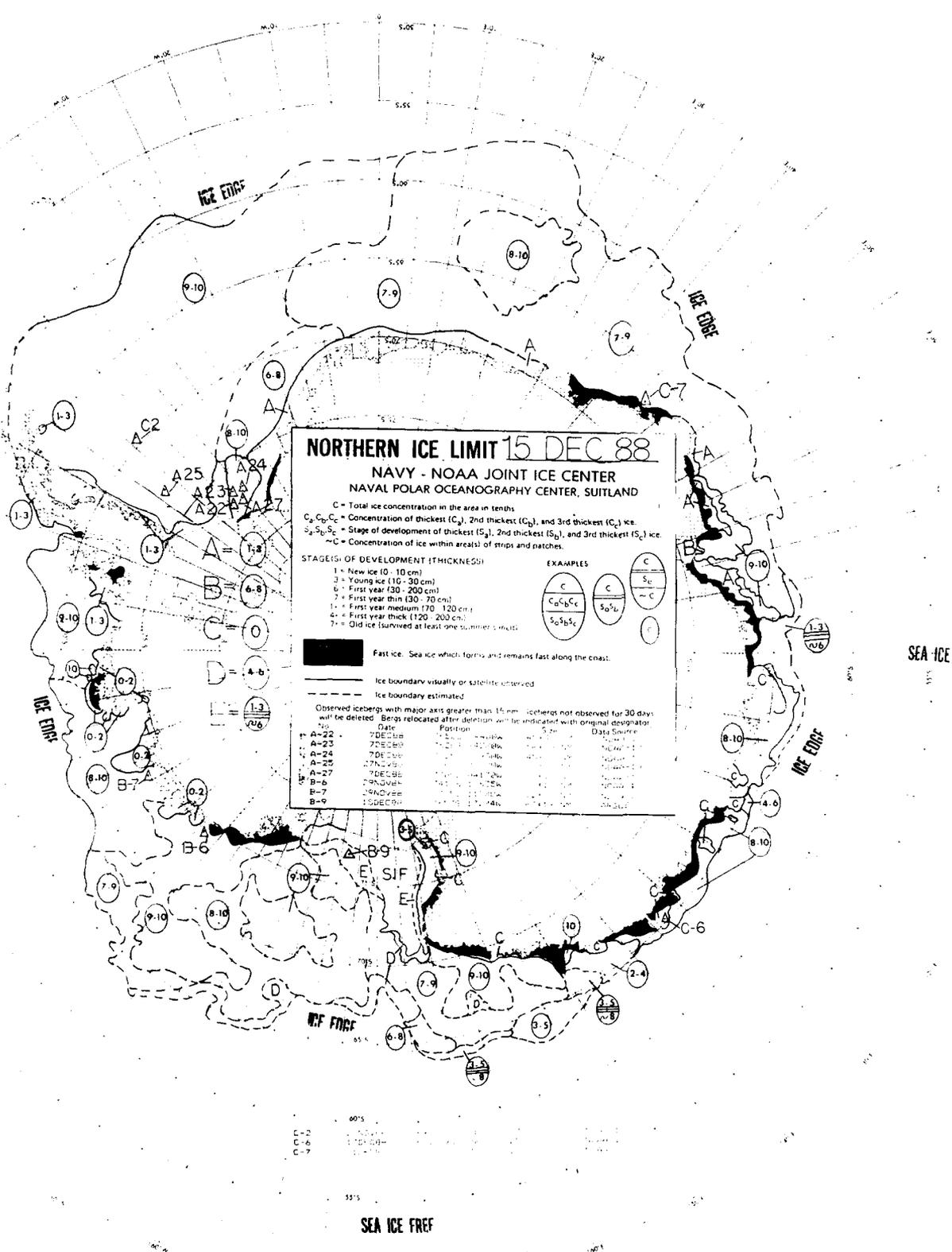
Fast ice: Sea ice which remains fast along the coast
 Ice boundary visually observed
 Ice boundary estimated

Observed icebergs with major axis greater than 100 m and minor axis greater than 20 m will be deleted. Bergs relocated after 24 hours will be deleted with no new sightings.

ID	Date	Lat	Long	Height	Area	Remarks
A-22	12/15/88	75° 10' N	150° 00' W	100	1000	1000
A-23	12/15/88	75° 10' N	150° 00' W	100	1000	1000
A-24	12/15/88	75° 10' N	150° 00' W	100	1000	1000
A-25	12/15/88	75° 10' N	150° 00' W	100	1000	1000
A-26	12/15/88	75° 10' N	150° 00' W	100	1000	1000
A-27	12/15/88	75° 10' N	150° 00' W	100	1000	1000
B-6	12/15/88	75° 10' N	150° 00' W	100	1000	1000
B-7	12/15/88	75° 10' N	150° 00' W	100	1000	1000
B-9	12/15/88	75° 10' N	150° 00' W	100	1000	1000

C-1
 C-6
 C-7

SEA ICE FREE

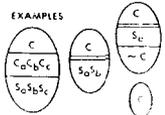


NORTHERN ICE LIMIT 15 DEC 88

NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice
 ~C = Concentration of ice within areas of strips and patches.

- STAGES OF DEVELOPMENT (THICKNESS)
- 1 = New ice (0 - 10 cm)
 - 2 = Young ice (10 - 30 cm)
 - 3 = First year (30 - 200 cm)
 - 4 = First year thin (30 - 70 cm)
 - 5 = First year medium (70 - 120 cm)
 - 6 = First year thick (120 - 200 cm)
 - 7 = Old ice (survived at least one summer melt)



Fast ice: Sea ice which forms and remains fast along the coast.
 Ice boundary visually or satellite observed
 Ice boundary estimated

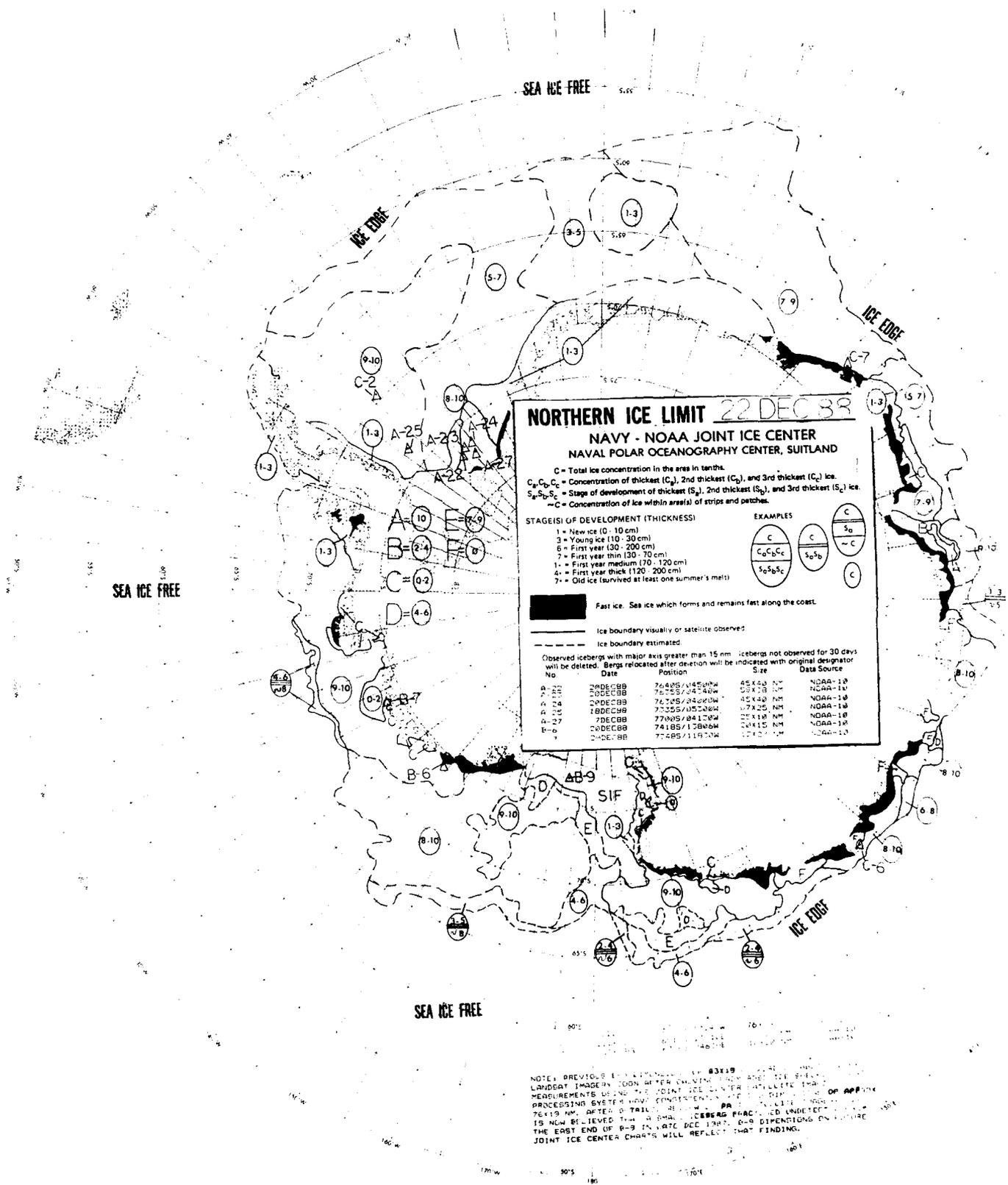
Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-22	7 DEC 88	74° 15' N 150° 15' W	100 x 100	ASD
A-23	7 DEC 88	74° 15' N 150° 15' W	100 x 100	ASD
A-24	7 DEC 88	74° 15' N 150° 15' W	100 x 100	ASD
A-25	7 DEC 88	74° 15' N 150° 15' W	100 x 100	ASD
A-27	7 DEC 88	74° 15' N 150° 15' W	100 x 100	ASD
B-6	9 DEC 88	74° 15' N 150° 15' W	100 x 100	ASD
B-7	9 DEC 88	74° 15' N 150° 15' W	100 x 100	ASD
B-9	15 DEC 88	74° 15' N 150° 15' W	100 x 100	ASD

C-2
 C-6
 C-7

SEA ICE FREE

SEA ICE FREE



NORTHERN ICE LIMIT 22 DEC 88

**NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND**

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGE(S) OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year thin (30 - 70 cm)
- 4 = First year medium (70 - 120 cm)
- 5 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES



Fast ice: See ice which forms and remains fast along the coast.

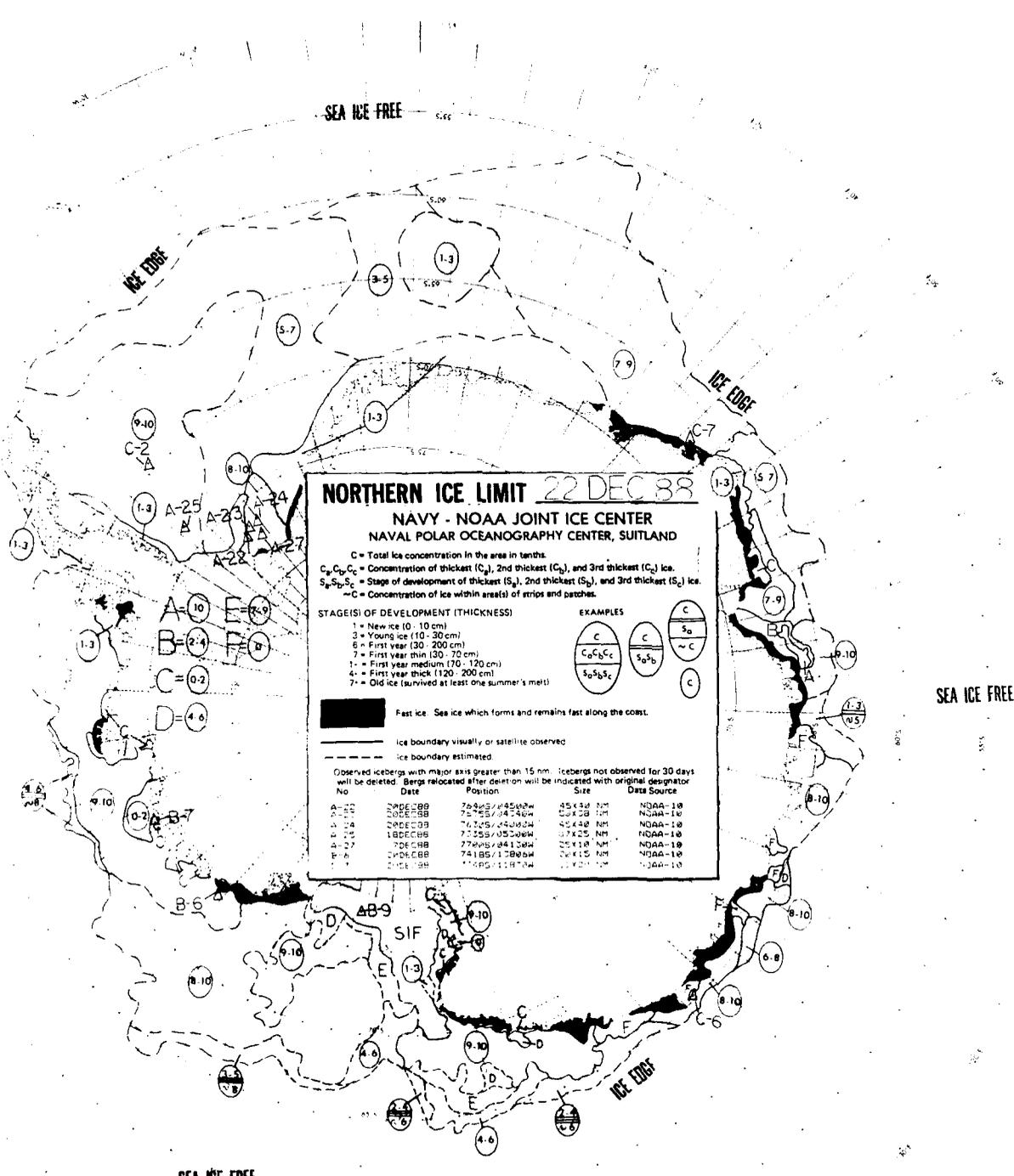
Ice boundary visually or satellite observed: (Solid line)

Ice boundary estimated: (Dashed line)

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-25	20DEC88	7640S/14510W	45 X 45 NM	NOAA-18
A-23	20DEC88	7675S/14740W	50 X 38 NM	NOAA-18
A-24	20DEC88	7670S/14600W	42 X 40 NM	NOAA-18
A-22	18DEC88	7575S/14520W	17 X 25 NM	NOAA-18
A-27	20DEC88	7700S/14120W	22 X 18 NM	NOAA-18
B-6	20DEC88	7418S/13800W	20 X 15 NM	NOAA-18
B-7	20DEC88	7485S/13920W	17 X 17 NM	NOAA-18

NOTE: PREVIOUS EDITIONS OF THIS CHART...
 LANDSAT IMAGES FROM AFTER CHANGING FROM THE EARLY
 MEASUREMENTS USING THE JOINT ICE CENTER...
 PROCESSING SYSTEM NOW COMPLETION...
 76419 NM. AFTER 0 TAIL...
 IS NOW BELIEVED THAT...
 THE EAST END OF B-9 IN LATE DEC 1987...
 JOINT ICE CENTER CHARTS WILL REFLECT THAT FINDING.



NORTHERN ICE LIMIT 22 DEC 88

NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 3 = First year (30 - 200 cm)
- 4 = First year thin (30 - 70 cm)
- 5 = First year medium (70 - 120 cm)
- 6 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)

EXAMPLES

$\frac{C}{C_1 C_2 C_3}$	$\frac{C}{S_1 S_2}$	$\frac{C}{S_1}$
$\frac{C}{S_1 S_2 S_3}$	$\frac{C}{S_1 S_2}$	$\frac{C}{S_1}$

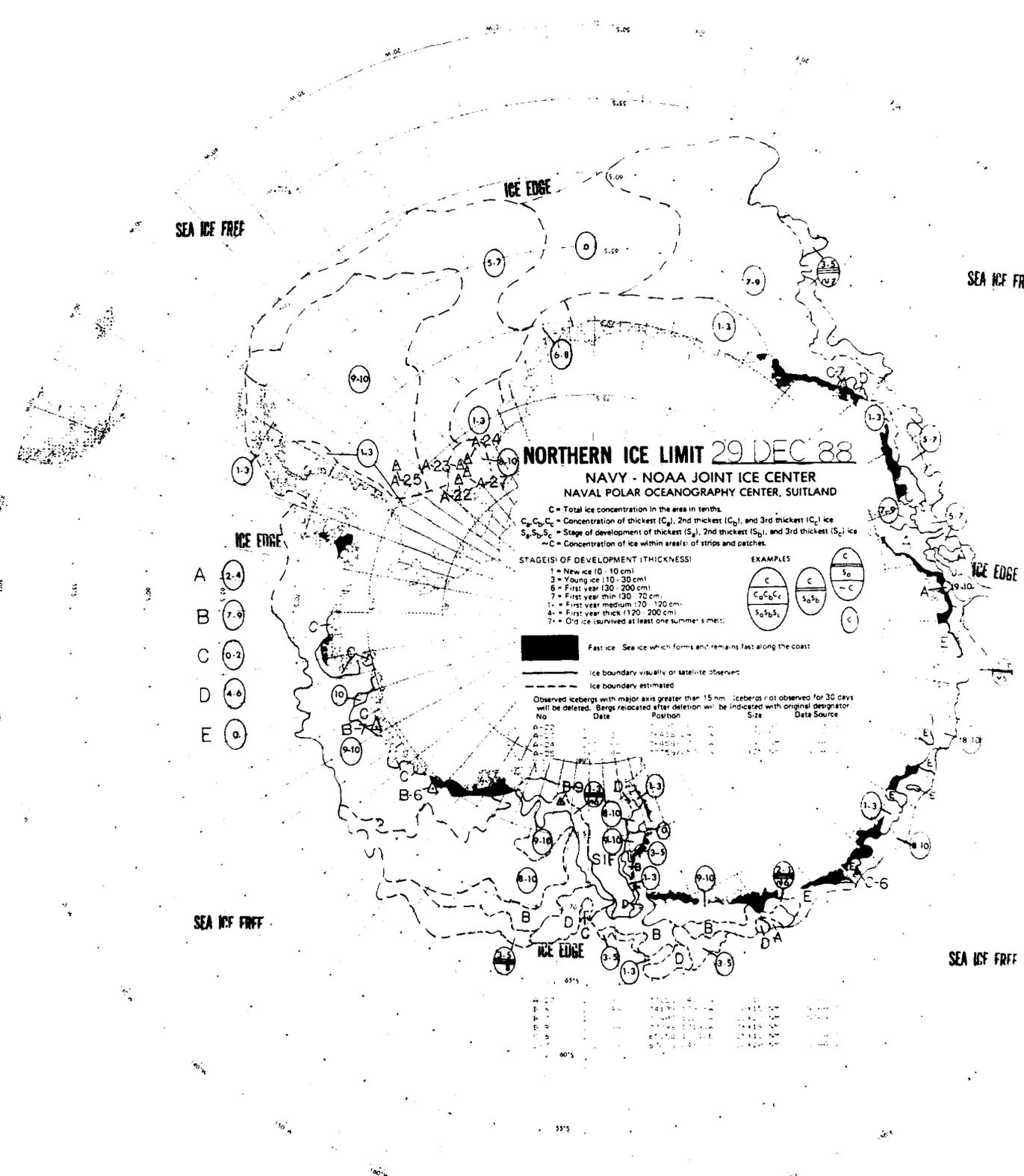
Fast ice - See ice which forms and remains fast along the coast.

— Ice boundary visually or satellite observed
 - - - - - Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
A-25	20DEC88	78°45'N/158°24'W	45 X 30 NM	NOAA-10
A-25	20DEC88	78°55'N/158°24'W	50 X 30 NM	NOAA-10
A-24	20DEC88	78°05'N/158°24'W	45 X 30 NM	NOAA-10
A-25	18DEC88	78°55'N/158°24'W	47 X 25 NM	NOAA-10
A-27	20DEC88	77°05'N/158°24'W	25 X 10 NM	NOAA-10
B-6	20DEC88	74°15'N/158°04'W	20 X 15 NM	NOAA-10
B-7	20DEC88	74°05'N/158°04'W	20 X 15 NM	NOAA-10

NOTE: PREVIOUS CHARTS... 83119...
 LANDSAT IMAGE...
 MEASUREMENTS...
 PROCESSING SYSTEM...
 78°15'N, 158°10'W...
 IS NOW BELIEVED...
 THE EAST END OF B-9 IN LATE DEC 1987...
 JOINT ICE CENTER CHARTS WILL REFLECT THAT FINDING.

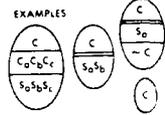


NORTHERN ICE LIMIT 29 DEC 88
 NAVY - NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
 S_1, S_2, S_3 = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
 -C = Concentration of ice within areas of strips and patches.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (10 - 10 cm)
- 2 = Young ice (10 - 30 cm)
- 6 = First year thin (30 - 70 cm)
- 7 = First year thin (30 - 70 cm)
- 1 = First year medium (70 - 120 cm)
- 4 = First year thick (120 - 200 cm)
- 7 = Old ice (survived at least one summer's melt)



- A (2-4)
- B (7-9)
- C (0-2)
- D (4-6)
- E (0)

Fast ice - Sea ice which forms and remains fast along the coast

Ice boundary visually or satellite observed

Ice boundary estimated

Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 30 days will be deleted. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Date Source
A-22	11-25-88	74-55 N 15-15 W	1000	NSIC
A-24	11-25-88	74-55 N 15-15 W	1000	NSIC
A-25	11-25-88	74-55 N 15-15 W	1000	NSIC
A-26	11-25-88	74-55 N 15-15 W	1000	NSIC

Lat	Long	Conc	Stage	Source
75-00	15-00	1.3	1	NSIC
74-50	15-00	1.3	1	NSIC
74-40	15-00	1.3	1	NSIC
74-30	15-00	1.3	1	NSIC
74-20	15-00	1.3	1	NSIC
74-10	15-00	1.3	1	NSIC
74-00	15-00	1.3	1	NSIC
73-50	15-00	1.3	1	NSIC
73-40	15-00	1.3	1	NSIC
73-30	15-00	1.3	1	NSIC
73-20	15-00	1.3	1	NSIC
73-10	15-00	1.3	1	NSIC
73-00	15-00	1.3	1	NSIC
72-50	15-00	1.3	1	NSIC
72-40	15-00	1.3	1	NSIC
72-30	15-00	1.3	1	NSIC
72-20	15-00	1.3	1	NSIC
72-10	15-00	1.3	1	NSIC
72-00	15-00	1.3	1	NSIC
71-50	15-00	1.3	1	NSIC
71-40	15-00	1.3	1	NSIC
71-30	15-00	1.3	1	NSIC
71-20	15-00	1.3	1	NSIC
71-10	15-00	1.3	1	NSIC
71-00	15-00	1.3	1	NSIC
70-50	15-00	1.3	1	NSIC
70-40	15-00	1.3	1	NSIC
70-30	15-00	1.3	1	NSIC
70-20	15-00	1.3	1	NSIC
70-10	15-00	1.3	1	NSIC
70-00	15-00	1.3	1	NSIC

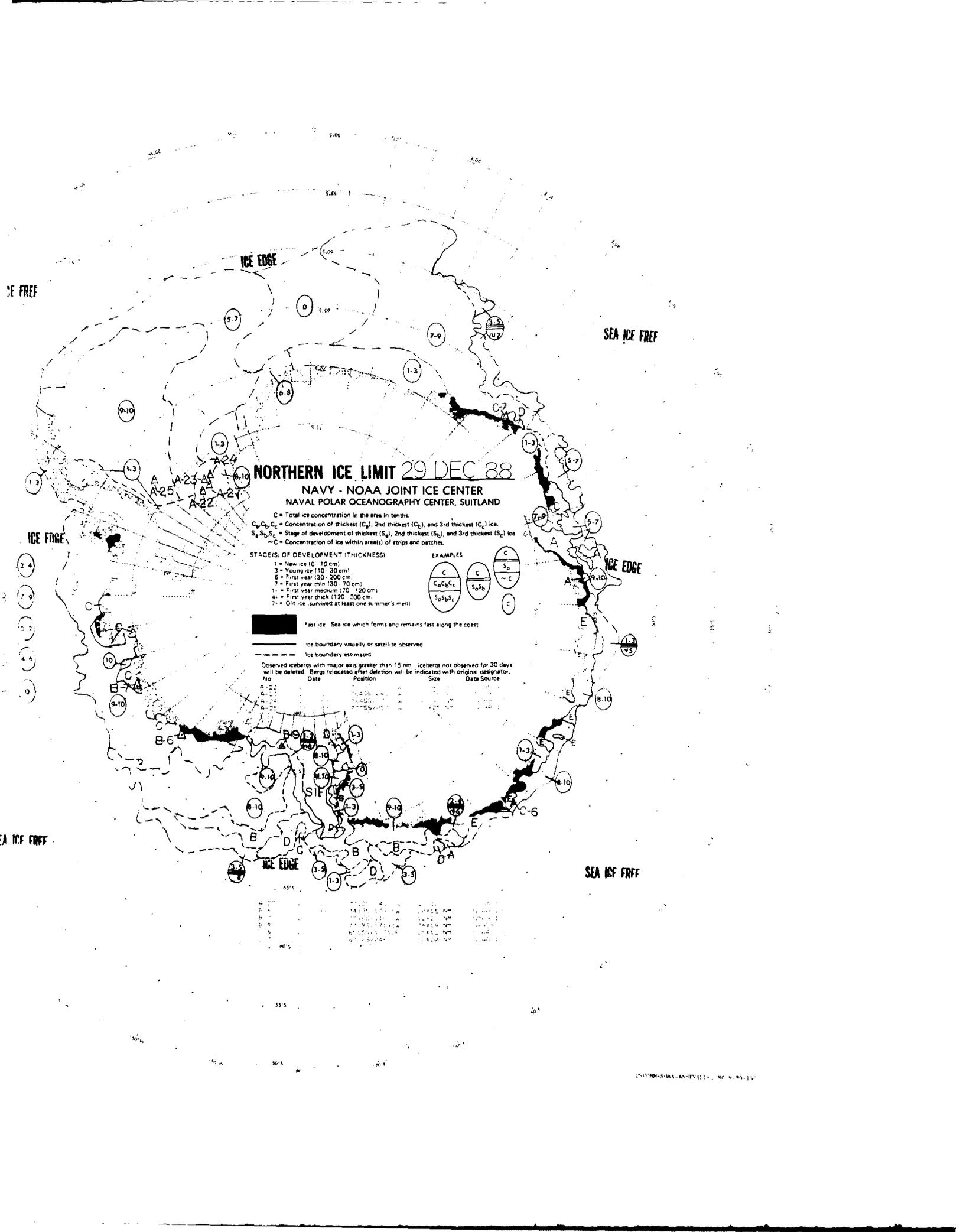


TABLE 1. SATELLITE DATA UTILIZED DURING 1978 AND 1988 (ANTARCTIC)

Time period		Satellite Remote Sensing				
From	To	Sensor Platform	Sensor Type	Spectral Region	Resolution	Coverage
1-87	3-87	NOAA-6	AVHRR			
			HRPT/LAC			
			VIS	0.58-0.68 um	1 km	Regional
			NIR	0.73-1.10 um		
			IR	10.5-11.5 um		
			GAC			
1-87	3-88	NOAA-9	AVHRR			
			HRPT/LAC			
			VIS	0.58-0.68 um	1 km	Regional
			NIR	0.73-1.10 um		
			IR	10.5-11.3 um		
			GAC			
1-87	12-88	NOAA-10	AVHRR			
			HRPT/LAC			
			VIS	0.58-0.68 um	1 km	Regional
			NIR	0.725-1.10 um		
			IR	10.5-11.5 um		
			GAC			
9-88	12-88	NOAA-11	AVHRR			
			HRPT/LAC			
			VIS	0.58-0.68 um	1 km	Regional
			NIR	0.725-1.10 um		
			IR	10.5-11.5 um		
			GAC			
1-78	10-87	NIMBUS-7	SMMR	0.81 cm	50 km	Global
				1.66 cm		
1-87	8-87	DMSP-F(6)	VIS	0.4-1.1 um	3.7 km	Global
			IR	8.0-13.0 um	4.4 km	
1-87	10-87	DMSP-F(7)	VIS	0.4-1.1 um	3.7 km	Global
			IR	10.2-12.8 um	4.4 km	
11-87	12-88	DMSP-F(8)	VIS	0.4-1.1 um	3.7 km	Global
			IR	10.2-12.8 um	4.4 km	
5-88	12-88	DMSP-F(9)	VIS	0.4-1.1 um	3.7 km	Global
			IR	10.2-12.8 um	4.4 km	
1-87	12-88	GEOSAT	Radar Altimeter	Microwave	7 km	Regional

Abbreviations and Acronyms

- AVHRR - Advanced Very High Resolution Radiometer
- cm - Centimeter
- GAC - Global Area Coverage
- HRPT - High Resolution Picture Transmission
- IR - Infrared
- km - Kilometer
- LAC - Local Area Coverage
- NIR - Near Infrared
- SMMR - Scanning Multifrequency Microwave Radiometer
- VIS - Visible
- um - Micrometer